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Society magazine

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N. W. SOCIETY'S MAGAZINE.

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EDUCATION.

It has been justly observed by a late writer that the term education is most erroneously restricted when it is applied exclusively to the instruction received at schools. Reading, writing, and accounts may be taught, and very useful acquirements they are so far as they go, but who will say that these are the whole, or even that they are the most important part of education? As qualifications for acting a useful part in life they are miserably deficient if moral culture, the regulation of the temper, and the infusion of proper principles be neglected. The improvement of the heart no doubt, will become more easy in proportion as the understanding is improved and enlarged, but while the most anxious care is discovered to make expert accountants, and sometimes considerable theologians, scarce any thing is taught which has for its direct object the formation of a good and beneficent character.

Now, there is a considerable period of early life during which little improvement in what is called learning can be expected, but which, notwithstanding, need not go to waste. It is the too often neglected period of infancy which presents the finest opportunity for moral culture. "While the mind," says the author above alluded to, "is yet untainted with vice, while its habits are unformed, while it is most susceptible of deep and lasting impressions, in a word—while in its infant state, the most valuable opportunities are hourly afforded, of bending it to what is amiable and virtuous, and of training it to all right habits. This truth has in all ages been admitted; but the material step that has of late years been made, is in extending the period during which this precious susceptibility of right impressions lasts, and in applying also a larger portion of attention to the cultivation of the infant mind, beginning much earlier, and tending it more constantly.

"Let any one consider the condition of a child from two to three years old, and he will find it in a state of perpetual curiosity, intensely eager in learning the nature of the world, where every thing is new to it, and exquisitely susceptible of every variety of sensation and feeling. *Much may about this period be learned beyond what is usually thought level to its capacity*; but at any rate, between three and five, when school education usually begins, two years of habitual curiosity are generally thrown away, as far as regards the understanding, and worse than thrown away as regards the temper and feelings. To speak only of the temper—before three years old, this is fully developed, nay, before eighteen months, it is abundantly marked. But as yet no habits are acquired, the vices of nature (supposing any exist) may easily be corrected, and right habits formed, which ordinary care in after years will render permanent and invincible. Suppose the child to be cross or passionate, how perversely cross, how violently passionate will it be found at five, if no pains are taken to wean it from such serious imperfections! We all know what a spoilt child is: and it may be safely affirmed, that all material spoiling is effected in these two important years. But there are many degrees of bad temper which are fitted to make the adult in after life miserable in himself, and the cause of wretchedness in others, although the child may not have been spoilt, that is, wholly neglected or indulged, or what is even worse, treated with the unsteadiness, fickleness, and caprice which will, in most cases, be found at the root of all spoiling. It is greatly to be feared that many things remain through life the same in a child's defects as they were at five years old, and resist every attempt at eradication, although reason may keep their effects within certain restraints, extremely painful to the individual, and injurious to honesty and openness of character. There is reason to believe that vices in general are not inbred, but instilled, and that a child removed from all example of evil, and taught no bad habits by injudicious treatment, *above all by severity, the parent of fear, the grand corrupter of the infant heart* would grow up naturally generous, and honest and placid."

The above extracts have been inserted in the hope that some steps may soon be taken towards the establishment of an agricultural seminary. Several gentlemen members of the N. W. Society have already manifested a strong interest in favour of such a measure, and there can be little doubt when the matter shall be seriously taken into consideration, it will have an advocate in every individual of discernment and public spirit who possesses a stake in the country. The venerable patron of our Society (the Lord Bishop of Derry) will be ready to put his hand to a work so truly patriotic and charitable. And if a feasible plan were once digested, and the public mind fairly brought up to the subject, is it too much to expect, that the N. W. Society will avail themselves of the opportunity to confer on their tenantry a boon, which will entitle them to be held in honour while living, and in everlasting remembrance when dead?

If it be thought that the above remarks have little reference to the business of agricultural education, it is granted that men may acquire skill in agriculture, whose early habits have been rude and vicious. But as in forming a plantation, a man chooses the most promising plants, and uses every precaution that his seedlings may be strong and healthy, so in establishing a seminary for young farmers, it would be desirable that those only should be admitted whose early habits and moral condition have been early and constantly attended to. Pupils coming with the advantage of such a preparation, would not fail to do honour to their teachers—the work of instruction, would go on well, and pleasantly and successfully.—Therefore preparatory schools ought to form a part of the scheme, or rather the schools at present existing might be converted into preparatory schools, and every village teacher might rank in eminence in proportion to the number of pupils, who on examination should be found most deserving as to moral conduct and as to scholastic attainments.

FAIRS.

May 17th—Baillieboro, Ballyconnell, Cavan—Beleek, Fermanagh—Clady, Dungannon, Tyrone—Convoy, Fintown, Tullydonald, Donegal—Swateragh, Derry—Scotstown, Monaghan—18th—Ballyhays, Swadlinbar, Cavan—Straid, Antrim—19th—Cloghanbeg, Donegal—Down, Hillsborough, Down—Killin, Tyrone—Maguire's bridge, Fermanagh—20th—Armagh town—Ballinahinch, Down—Ballintra, Donegal—Omagh, Tyrone—21st—Ballybofey, Carndonagh, Donegal—Belturbet, Cootehill, Cavan—Clough, Down—Donnelong, Tyrone—Drimbar, Mosside, Antrim—Garrison, Fermanagh—Glaslough, Knockbuy, Monaghan—Moneymore, Derry—22d—Largy, Cavan—Lisnarrick, Fermanagh.

MANUFACTURE OF FLAX.

One of the most extensive manufacturing houses of linen goods and importers of flax in Scotland, that of Mr. Maberly, has sent over a gentleman of the establishment to Ireland, in order to ascertain, by actual experiment, whether the south of Ireland cannot produce the raw material for their manufacture, of as good quality, and at as moderate prices, as they have to pay for the same article imported from Russia and other parts of the continent. With this view, he has taken portions of land (to the extent, it is stated, of 100 to 150 acres altogether) in different counties in Munster, which are to be cultivated with flax after the mode practised in Holland, saving the seed from it, which, in all cases, becomes a principal part of the profit, but hitherto almost wholly overlooked in Ireland. This gentleman has procured several acres of land in the neighbourhood of Bruff, the richest, it is believed, in the county of Limerick. It is very decidedly the interest of the Irish landowners to afford every facility to this experiment, for it is natural to suppose, that if the house in question finds that Ireland can produce the article as imported, that they will take their supply of flax from her in preference to importing from a foreign country. This would induce other manufacturers to do the same, and in a while we might expect to find the south of Ireland supplying England and Scotland with flax to the enormous amount of one million annually, which they now take from Russia, Holland, &c. The house which has so laudably undertaken this experiment, with a view to the improvement of Ireland, consumes upwards of fifteen hundred tons of flax annually in their manufacture.

CULTIVATION OF FLAX.

It appears that the only obstacle to our farmers' enjoying the same advantages in the cultivation of flax as their continental neighbours, is their obstinate adherence to old customs. There is an erroneous opinion in this country, that the Dutch have a better soil than ours, for the growth of flax; and, consequently, that all exertion on our part to compete with them in the market, is useless. But Mr. Besnard has, after the most minute investigation, proved the contrary; and we

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must also say, that Holland is a low, swampy piece of land, reclaimed from the sea, and unfavourable to cultivation in general; but the persevering industry of the inhabitants, has surmounted all the obstacles which nature had thrown in their way; and a territory that is not more than one-third the extent of Ireland, possesses more wealth than would purchase this kingdom, and has often bid defiance to the united powers of Europe.

It will be seen that the essential difference betwixt our farmers and the Dutch, in the management of flax, is in the steeping, and it is a circumstance of the utmost importance to be observed, that the very saving of the seed is the cause of their superiority in the steeping process in Holland, and of the excellence of their flax.

On a recent examination by Mr. Bander, of Kew, in England, he found that the fibres of the flax plant are cylindrical tubes, the surface presenting a spiral appearance, thro' which the mucilage or resinous matter is discharged whilst steeping; this resinous matter is a permanent dye, from which a variety of shades of colour has been obtained; and here the great mystery lies, of the variety of shades of colour so often found in the same parcel of flax, the cause of which farmers are totally unacquainted with, and this shews the necessity of their forming societies, for acquiring agricultural information.

The top of the plant is the mouth of the tube, on which the bole acts as a stopper or seal, and if this be removed before steeping, the process will go on regularly in the pool, and the flax will be of one colour throughout; but if all the boles should not be removed, (as is the common practice) then that part of the flax which parts with the mucilage before the rest, will be sooner steeped; thus some parts will be over-steeped and others not sufficiently done, which causes all the variety of colours and irregularity of texture, so often found in Irish flax; and farther, the absurd way of putting layers of sheaves on the top of each other in the pool, causes the mucilage from the upper ones to stain those which are below, and gives infinite trouble afterwards to the bleacher, to remove it from the cloth.

The numerous oil-mills which Mr. Besnard observed in the vicinity of most of the towns he visited, proves what a market the manufacture of linseed oil would open for our surplus seed saved, when we consider the great quantity of it that is used in these kingdoms, and we then could afford to sell it at half the price of that made from foreign seed, which would greatly extend the consumption, and give us the monopoly of the English market.

The next consideration is the unmerchantable state in which our flax is brought to market, and this should call forth the united exertions of every landlord, linen merchant, manufacturer, and exporter in the country to remedy the evil. It has called forth the reiterated complaints of the English and Scotch merchants, until expostulation became unavailing, and they were obliged to have recourse to the foreign markets, from which they are now almost exclusively supplied.—The Irish flax is so badly cleaned, and made up in so careless a manner as to quantity, and so fraudulent with respect to quality, that all confidence with the English and Scotch purchasers has been destroyed; and it is now extremely difficult for any of our respectable dealers in flax, to complete a small order for the English markets, without great trouble in re-assorting and packing, at an expense exceeding his commission. The consequence is, that the trade is almost annihilated, and that which might have been the staple export of our country, is now the most insignificant. When brought to market, it is full of shoves, from the reedy part not having been properly removed, and which the hackle afterwards may subdivide, but never can separate from the fibre. We have seen instances in our own market, when flax of the best description as to texture, would not bring within two shillings per stone of that which was inferior, from the improper manner in which it was cleaned.

The making of it up in stones of 14, 16, and 24lbs. and sometimes in bundles of no specific weight, is highly objectionable; for if it were made up in small parcels, it would then afford to be more easily packed in a flat and neat form, so necessary to its assuming that soft and silky feel and appearance, for which the Dutch flax is so much prized. So well aware were the Dutch farmers of this circumstance, that they make up theirs in stones of 6½lbs.

The practice also of mixing long and short flax of different colours, in the same parcel, leads to numerous frauds. This so harrassed and perplexed the individuals who would have continued to employ their capital in the purchase and export of flax, that they became disgusted with the business, and transferred their money and attention to other branches of trade.

Under this ruinous system does our flax trade still remain, without any hope of amendment, until the legislature may compel the cultivator of flax, (as it does the manufacturer of linen) to bring it to market in a merchantable state, so that the exporting merchant will be enabled to purchase it by sample, as if the whole parcel had been carefully inspected. No other means will ever bring it to that degree of prosperity and advantage to the country, to which it is capable of arriving.

It is now a most critical period for the linen and flax trade of this country; the latter has been almost excluded from the English and Scotch markets; and in proportion as the material declines in quantity, so must the manufactured article also, and vice versa. The rapid strides that the English and Scotch are making in the manufacture of linen, is not considered in this country with the attention that so serious a subject deserves; and they may, ere long, supersede us in the export of linen.

The following returns of the export of linen from Britain and Ireland, for the year ending January, 1824, ought to be viewed with attention by those interested in the trade:—

Value of Irish linens exported to all to all prats	£2,883,839 10 7½	
Quantity of British linens exported		34,715,890 yards.
Quantity of Irish do. do. from Britain		12,889,271 ——
In favour of Britain		21,826,619 yards.
Bounties paid on British linens exported	£207,285 0 0	33,607,985 yds.
Do. on Irish do. from Britain and Ireland	90,921 4 10	14,605,273 ——
In favour of Britain	£116,363 15 2	19,002,712 yds.

From the above statements we may confidently predict, that if some measures be not adopted to regulate our flax trade, and to continue the bounties on the export of coarse linen, for some time longer, that vital branch of our trade will be irrecoverably lost to the country. There never was a period so favourable to the increase of the linen and flax trade of Ireland, as the present, from the extensive markets that will be opened in South America; but if foreigners are permitted to seize the opportunity of supplying the demand, it will be extremely difficult for the Irish merchant afterwards to gain that ascendancy, which he might have accomplished in the beginning.

The Spring meeting of the East-Lothian Agricultural Society was held at Haddington on Friday the 9th inst. The show of stock was uncommonly good. The premiums for the best fat cattle, and for the best bull, were awarded to Messrs. Bogue and Walker, Snadon; for the best bred stirk, to Mr. John Rennie; and for the best winterers, to Mr. Bairnsfather, Beanston. The Society voted five guineas to the itinerating libraries, under the charge of Mr. Samuel Brown, for the purchase of books on agricultural subjects. The principle on which these libraries have been established is new, but they are calculated to be of great service to farm servants, labourers, and mechanics, in affording them opportunities for acquiring useful knowledge. The members of the Society, to the number of 60, dined afterwards in the George Inn, Lord Elcho, one of the vice-presidents, in the chair.

OBSERVATIONS ON DRILLING, PROPER DISTANCE *of* DRILLS, &c.

(From the Irish Farmers' Journal.)

"In whatever kind of soil, and wherever the method of sowing by the drill is attempted it will invariably be proper, besides suiting the crop to the quality of the soil, to proportion the quantity of seed to the nature of the land, and the distance of the rows to that of the crops, and likewise keep up a constant & minute regard to the culture of the crop during its growth. In this way, different distances in the rows and intervals have been recommended, according to the particular intentions of the agriculter. It is obvious that inconveniences must be experienced by their being either too large or too narrow, as in the former there must be a great loss of ground;

and in the latter little advantage can be derived in the culture of the crops, while growing.—The nature of the land must probably have considerable influence in regard to the distance of the rows, and manner of drilling.—On the dry light sorts of soil, whether loamy, gravelly, or chalky, that can be constantly kept upon the flat, as is the custom in the eastern parts of Kent, close drilling is probably to be preferred as the most advantageous. But on such soils as require ridging, somewhat wider distances may be proper. An ingenious inquirer on this subject found, that drilling three rows eleven or twelve inches asunder, on three-bout ridges, generally succeeded well. The three-bouts, in this way, form a ridge about four and a half feet in breadth; the three rows at the distance mentioned occupying two feet, and the horse-hoe, passing on the side of each outside row, at the distance of three inches, leaves the ridge two and a half feet broad, and the intervals between the ridges about two feet. It is, however, further suggested, from remarking that in these cases the outside rows always afford the most vigorous and most healthy plants, that two rows only, on two-bout ridges would be productive, and leave the land in better condition. But, whatever may be the most applicable and most suitable distances, which experiment does not seem to have yet fully shewn, the very wide intervals of the early practice are to be avoided as improper for all sorts of grain crops, both on account of the loss that must unavoidably be sustained by the largeness of the spaces, and because the intervals, or spaces between rows, at much less distance, can in the improved methods of horse-hoeing, be stirred with equal facility and exactness.

" For various kinds of green crops, such as cabbages, potatoes, and others of a similar nature, wide distances must obviously be the most proper. But the width of the intervals and the proportion of seed, that have appeared the most eligible to an intelligent cultivator, after a practice of fourteen or fifteen years, are for wheat, rye, barley, oats, and vetches on such soils as are not very wet, equidistant rows of one foot, on five or ten feet ridges. And for beans, peas, and turnips, on three-feet ridges, two rows on each, nine inches apart, with intervals of twenty-seven inches.

" In respect to the proportion of seed, it is observed, that such lands as are in high tilth, and on five feet ridges, will only require three pecks of seed of either wheat or rye, five pecks of barley, oats, or vetches, and one bushel of beans or peas, to the acre. It is suggested, however that these proportions should be varied, in the quantity of a peck to the acre, according to the quality of the seed, and the richness of the land.

" It is remarked by another experienced driller, that in respect to wheat and barley, the distance of the rows and the quantity of seed must greatly depend on the quality of the soil. Where it is poor, the distance between the rows should not be more than about eight inches, nor the quantity of seed more than about nine pecks, being deposited to the depth of two inches and a half. If of a middling quality, the distance between the rows may be about nine inches, and the proportion of seed eight pecks; and where it is rich the distance of the rows should not ever exceed ten inches, with a quantity of seed of about seven pecks. The latter sort of grain should also have a finer tilth, and not be placed so deep in the soil. As oats do not tiller so much as other grains, in drilling them a larger proportion of seed will be requisite.

" It is likewise stated, that as beans and peas afford plants of a very succulent nature, they of course require a greater distance between the rows, and more especially as they are well suited to the horse-hoeing method of culture. He has constantly found twenty-four inches to be the most advantageous distance for such crops, and the depth of about three inches.

" In the sowing of turnips, rape, &c. on the poorer sorts of soils, adapted to the growth of these plants, he has invariably found ten inches to be the properest distance, and on those of the richer description twelve.—When they are sown at greater distances, he thinks they are apt to grow too large for keeping any great length of time. If sown at a wider distance, which may notwithstanding, be proper on such soils as are particularly rich, they should therefore be eaten off before the severe frosts set in, as large turnips are very liable to be destroyed by them.

" In the putting in of carrot crops by the drill method, fourteen inches between the rows is recommended as the most proper distance, the land being slightly harrowed over after the drilling is finished.

"There is considerable difficulty, however, in ascertaining the most proper and suitable distances in different cases, as they must of necessity depend in a great measure upon the nature and state of the soil, as well as that of the crops.

"It is obvious, however, that for grain crops, such as wheat, barley, &c. from the vast loss of ground that must take place, the great distances practised by Tull can seldom if ever be had recourse to with advantage.—The experience of drillers in general seems indeed to have shewn, that on most sorts of soil that are suited to that method, and especially those of the light and dry kinds, the drilling in close rows, or at narrow distances, is by much the most beneficial mode. The distances between the rows, and the proportion of seed to the acre, that have been found by an experienced drill cultivator, to afford the best and largest crops are as below.

Kind of Soil.	WHEAT.		BARLEY.		OATS.		BEANS.	
	Quantity of Seed	Distance between the rows.	Quantity of Seed.	Distance between the rows.	Quantity of Seed.	Distance between the rows.	Quantity of Seed.	Distance between the rows.
	Pecks.	Inches.	Pecks.	Inches.	Pecks.	Inches	Pecks.	Inches.
Poorest	10	8	12	8	16	8	12	18
Poor....	9	8	10	8	14	8	10	20
Rich....	8	9	8	9	12	9	9	24
Richest	7	10	7	10	10	10	8	28

"And from great experience it has been found, that for white corn crops nine inches answer extremely well, but that for pease, tares, turnips, and other similar crops, eleven inches is the distance that succeeds the best, and that for beans eighteen inches are not more than is necessary. It has likewise been found in respect to this last sort of crop, by others accustomed to the row system, that when drilled in two rows at nine inches, with an interval of twenty-seven, if weeded sufficiently early, and ploughed between in the method recommended by Mr. Cook, it becomes extremely thick and fine.

"When clover or other grasses are grown, the practice of sowing them over the drilled barley crops, and covering them by the last hoeing, whether it be by the hand or horse, has been long since considered of much importance, and far superior to the usual method of rolling them in.

"It is likewise evident that larger crops of barley may be procured by drilling with intervals of a foot, than by the broadcast method; a point that has been much doubted by some cultivators.

"The advantage of the drill method of sowing even for grain crops, seems therefore to be placed by these experiments in a point of view that must tend to promote the practice: and for pease, beans, turnips, potatoes, cabbages, vetches, and many similar crops, it has long been almost generally considered as the most convenient and beneficial by those who have not supposed it adapted to grain.

"But in respect to an increase in the produce on various descriptions of soil, such as these of the loamy and mellow, as well as the cold, clayey, and more stiff kinds, experiments which are asserted to have been made with much accuracy, appear likewise from Mr. Cooke's statements to be in favour of the drill system. This was found to be the case in Mr. Boote's practice, when extended to more than three hundred and sixty acres, as well as in that of many other cultivators. Since the result of these trials were taken, the various improvements that have been made both in the machinery for the purpose of drilling the crops, and those for hoeing and keeping them clean afterwards, must probably have contributed to render the differences in the quantities of produce under the different methods of sowing still more considerable.

"The practical statements of a later experienced drill cultivator may, probably, on these accounts be more satisfactory, and afford a more correct view of the superiority of the practice. The writer, after a slight trial with another drill machine, and becoming more acquainted with the nature of the drill culture from a more extensive observation of it in different places, determined upon making use of Mr. Cooke's machine, and the method of management which he has recommended. He began by drilling in November, 1791, two acres and a-half of light, dry, loamy land, not worth more than twelve shillings the acre, midling barley soil, broken up from the state of a foul, poor, pea stubble, with red lammas wheat, at the rate of one bushel to the acre, in rows with nine-inch intervals; another part of the field, confessedly better by 5 or 6 shillings the acre, being sown at the rate of two bushels to the acre in the broadcast method, managed in the best manner of that practice. The crop of the broadcast sowing was, on account of the thinness of that of the drilled it is said, much superior in its appearance during the winter and the early part of spring; but the other after being scarified once in March, and horse-hoed the last week in May, exhibited a decided superiority, the broadcast declining considerably; and that on the crops being reaped, that part under the drill system afforded nineteen bushels three pecks on the acre; while the part managed in the broadcast method did not produce quite five bushels on the same extent of land.

"And in a second experiment, on one acre of potato fallow, of the annual value of about 20s. prepared by being once ploughed and harrowed, and sown in March, in the drill mode, with one bushel of white lammas wheat; the plants when in double leaf being once scarified, and immediately afterwards, harrowed across with a common harrow, and after attaining the height of six or eight inches horse-hoed, the crop had also the appearance of being thin and slight till after midsummer; but the produce, on being reaped, both in grain and straw, was, notwithstanding, very considerable, being twenty-nine bushels three pecks, nine gallon measure.

(To be continued.)

ON POTATOES,

By Thomas Andrew Knight, Esq. F. R. S. &c.

(From the Transactions of the Horticultural Society.)

In the Horticultural Transactions of 1807, I have described a method of cultivating early varieties of the potato, by which any of those, which do not usually blossom, may be made to produce seeds, and thus afford the means of obtaining many other early varieties. I also offered a conjecture that varieties of moderately early habits, and luxuriant growth, might be formed, which would be found well adapted to field-culture, and be ready to be taken from the soil, in the end of August or the beginning of September, so that the farmer might be allowed ample time to prepare the same ground, for a crop of wheat. I am now enabled to state, that the success of the experiment has in both cases fully answered every expectation that I had formed.

The facts that I have stated in the Horticultural Transactions of 1807, and more fully in the Philosophical Transactions, are I believe sufficient to prove that the same fluid, or sap, gives existence alike to the tuber, and the blossom and seeds, and that whenever a plant of the potato affords either seeds or blossoms, a diminution of the crop of tubers, or an increased expenditure of the richness of the soil, must necessarily take place. It has also been proved by others, as well as myself, that the crop of tubers is increased by destroying the fruit-stalks and immature blossoms as soon as they appear, and I therefore conceived that considerable advantages would arise if varieties of sufficiently luxuriant growth, and large produce, for general culture, could be formed, which would never produce blossoms.

I have since had the gratification to find that such are readily obtained, by the means which I have detailed, and I am disposed to annex more importance to the improvement of our most useful plants, than any writer on agriculture has hitherto done; because whatever increased value is thus added to the produce of the soil, is obtained without any increased expense or labour, and therefore is just so much added to individual, and national wealth.

I formerly supposed that all varieties of the potato, which ripened early in the autumn, would necessarily vegetate early in the ensuing spring, and could therefore be fit for use only during winter; but I have found that the habit of acquiring maturity early in the autumn is by no means necessarily connected, with the habit of vegetating early in the spring; and therefore by a proper selection of varieties, the season of planting crops, for all purposes, may be extended from the beginning of March, nearly to the middle of May, and each variety be committed to the soil exactly at the most advantageous period.

A variety, however, which does not vegetate till late in the spring, and which ripens early in the autumn, cannot, I conclude, particularly in dry soils and seasons, afford so large a produce as one which vegetates more early. I, nevertheless, obtained so large a crop from one which vegetates remarkably late in the spring, and ripens rather early in the autumn, that I was induced to ascertain, by weighing, to what the produce would have amounted had the crop extended over an acre, and I found that it would have exceeded 21 tons, 11 cwt. 80lb.*

In this calculation the external rows, which derived superior advantage from air and light, were excluded; and no more manure, or culture, than is usually given, had been employed; for the crop was not planted with any intention of having it weighed: the wet summer was, however, very favourable.

I am not acquainted with the common amount of the weight, of a good crop of potatoes, upon an acre of ground in a favourable soil, when well manured and cultivated; but I am confident, that it may generally be made to exceed 20 tons, by a proper selection of varieties: and if four pounds of good potatoes afford, as is generally supposed, at least as much nutriment as one pound of wheat, the produce of an acre of potatoes, such as I have described, is capable of supporting as large a population, as eight acres of wheat, admitting the calculation of Mr. Arthur Young, that the average produce of an acre of wheat is 22½ bushels:† and as an acre of wheat will certainly support as large a number of people as five acres of permanent pasture, it follows that an acre of potatoes afford as much food for mankind, as forty acres of permanent pasture: an important subject for consideration, in a country where provisions are scarce and dear, and where so high bounties, on pasture, are paid in the form of taxes on tillage, that the extent of permanent pasture is certainly and consequently increasing: and it must increase under existing circumstances: for it pays a higher rent to the landlord, and relieves the farmer from much labour, anxiety, and vexation.

To what extent, a crop of potatoes will generally be increased by the total prevention of all disposition to blossom, the soil and variety being, in all respects, the same, it is difficult to conjecture; but I imagine that the expenditure of sap in the production of fruit stalks and blossoms alone would be sufficient to occasion an addition, of at least an ounce, to the weight of the tubers of each plant; and if each square yard were to contain eight plants, as in the crop I have mentioned, the increased produce of an acre would considerably exceed a ton, and of course be sufficient in almost all cases, to pay the rent of the ground.

(To be continued.)

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* 48352 lbs.

† 1440 lbs.

PRICES OF FLAXSEED.

American Seed, ...	47s	6d	to	00s	0d	per hhd.
Dutch, ...	55s	0d	-	00s	0d	
Riga, ...	24s	0d	-	00s	0d	per barrel.

CURRENT PRICES IN DERRY.

Oatmeal,	...	14	6	*to*	15	6	*per cwt of 120lb.*
Oats,	...	0	10	–	1	0	*per stone.*
Barley,	...	1	0	–	1	4	
Potatoes,	...	0	4	–	0	5	
Beef,	...	0	5	–	0	7	*per pound.*
Mutton,	...	0	4	–	0	7	
Veal,	...	0	6	–	0	10	
Pork,	...	34	0	–	37	6	*per cwt. of 120 lbs.*
Butter,	...	0	10	–	0	11	*per pound of 18 ozs.*
Flax,	...	45	0	–	56	0	*per cwt. undressed.*

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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ON THE SUN FLOWER.

(By Mr. J. Saunders, of Stroud.)

Mr Saunders has given his ideas on the use of the seed of the sun-flower at considerable extent, but in a very entertaining manner. He mentions among many other particulars the following which appear of the most importance. Mr. Saunders has tried this seed as a food for swine, horses, poultry and rabbits; all which eat it eagerly, and derive good nourishment from it. He computes that the produce from an acre would be very great, not less than from fifty to sixty sacks; and gives the following calculation on the subject.

Every sun-flower plant, allowing it the liberal space of three square feet of land to grow on, will yield, at an average, a pint of seed, or 5000 grains. A grain of sun-flower seed is twice the size of a grain of wheat. A bushel of wheat, weighing 62lbs. will contain 616,000 grains, consequently a bushel of sun-flower seed will contain but half that numer, or 308,000. If a single plant yields 5000 grains, 64 will produce 320,000, which is an excess of 12,000 grains above what is required to fill a bushel. An English acre consists of 43,560 square feet, and allowing three feet to each plant, will therefore contain 14,520 plants: which at 64 plants to a bushel, will give 226 bushels, or 56½ sacks, at four bushels to the sack; which amounts to 28 quarters of seed over and above the 12000 grains surplus of each bushel, which for the whole acre would be nearly equal to 9 sacks more, that are allowed for depredations of birds and for waste.—This would be a vast product of grain, considering that wheat yields but five quarters to the acre. Mr. Saunders accounts for this extraordinary produce, by stating that the sun-flower plant spreads its branches and heads in successive layers, one over another, somewhat after the manner of apple trees.

He states also that the stalks of the plants would make good fuel, of which an acre would yield from three to nine waggon loads; and that they might be formed into hurdles for enclosing sheep.

The leaves of the sun-flower would afford an excellent green food for cattle: rabbits eat it greedily; and there is no reason why it should not answer equally well for other animals.

The seeds are generally sown in February or March, but some suppose that it would be better to sow them in November or December.

They should be dibbled into holes three feet asunder, in rows a foot apart. When the supernumerary plants arise, they should be thinned out with the hoe.

It would be better to pull the plants up when ripe, than to cut them, because of their woody nature, and to prevent scattering the seed. They should be left in the field some time to dry after being pulled, and should then be bound with tarred twine, and stacked in small sheaves in the field, with the heads inclining inwards; they might afterwards, when perfectly dry, be stacked in the same manner as corn.

Mr. Saunders thinks the seeds might be used as food for man, as they have a pleasant taste, like a nut, and children often are fond of them.

Bees eagerly seek the flowers, and it is supposed much advantage might be obtained from the honey they would produce.

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The only objection that appears against the cultivation of the sun-flower plant, arises from the great inequality with which the heads ripen, but perhaps means might be found to diminish the inconvenience this would occasion; and the cultivation of them is at least worth a fair trial, from the many advantages of it pointed out.

The plant is cultivated on the continent for the oil pressed from its seeds, which affords a strong presumption that they would form a very nutritious food for cattle.

OBSERVATIONS ON DRILLING, PROPER DISTANCE *of* DRILLS, &c.

(From the Irish Farmers' Journal.)

(Continued from page 199.)

"In the spring of the same year, thirty acres of land of the value of from thirty-five to forty shillings the acre, were tilled, manured, and prepared in every way in a similar manner: fifteen acres of which being drilled in rows at nine inches, with two bushels of seed to the acre, and fifteen acres broadcasted, with from three to four bushels the acre. During the growth of the crop, and at the time of cutting it, the season was extremely wet. The crop put in, in the latter method, was lodged, stained, and secured with great difficulty; while that in the former was scarcely lodged at all, and being clear from weeds, was housed without injury, at half the extra expense of the other. The produce of grain was from ten to fifteen bushels the acre more in quantity, and one shilling the bushel better in quality, although the broadcast crop had the advantage of being the first sown, which was a point upon which much depended that season.

"And in a concluding experiment, a field of ten acres tilled, manured, and prepared for wheat, in every respect in a similar manner, except that half was drilled with one-half the above proportion of seed at nine-inch intervals, and the other sown broadcast. Doubts being entertained of the value of the land in different parts, two twelve-furrow ridges were, by way of proof, gathered thro' the middle of the part intended for drilling, the row sowing being commenced on each side of them. The two ridges were managed, both in respect to ploughing, sowing, and being weeded, in the manner of the common husbandry of the district. The drilled crop had one scarifying and horse-hoeing. At the period of harvest, the two ridges were first cut; and immediately afterwards a breadth equal to one of them, of the drilled, was cut on each side, and each part secured and kept separate till in a proper condition to be thrashed, when they were carted into different barns, thrashed out, and winnowed; the drilled crop affording twenty-nine bushels three pecks, and the broadcast twenty bushels and one peck. And that the experiment might be conducted with as much accuracy as possible, the same person was employed to winnow and measure the whole.

"These experiments appear to have been made with so much exactness, and in so judicious a manner, that there can be little doubt of the results; and they have presented so favourable an idea of the practice to the writer, that he assures us he has ever since followed it for the whole of his crops, repeatedly sowing a part broadcast by way of proof; but that he has never once, among all his trials, seen the broadcast sowing equal to the drilled part.

"There is another point in which the superiority of the drill method of sowing is said to have a considerable superiority, which is in the saving of seed; but it is probable that in this way the advantages cannot, in general, be so great as the statements of cultivators under particular circumstances of soil and situation have made them. This would seem to be the case, from the observations so frequently made, that those engaged in this method of practice generally continue to increase the quantity of seed in almost all descriptions of crops, and on most sorts of soil. The great differences in the details of expense under the different methods, as given by the very intelligent practical agriculturist just mentioned, shew, however, that much advantage may be derived this way, where a correct attention is bestowed in the management.

"There is reason to suppose that some proportions of seed may be more advantageous than others in regard to the quantity of produce, as it is obvious that injury must be sustained from the crops being either too thin or too much crowded on the ground. Few experiments have hitherto, indeed, been made with a view to the ascertaining of this matter; but the results of the few trials that have been attempted, seem to speak in favour of the drill method of only a middling proportion.

Numerous experiments have been described by writers on husbandry, in which the drill method has been shewn to be greatly superior to that of the broadcast for various sorts of luxuriant vegetable crops, such as peas, beans, potatoes, cabbages, and even turnips, in most cases. It has been observed by an attentive drill cultivator, that beans, when drilled in two rows, at nine inches, with an interval of twenty-seven, if weeded sufficiently early, and well ploughed between, become quite thick, and abundantly productive. And in planting a coarse piece of poor land, in two different ways, with potatoes, the one part in the common lazy-bed manner, and the other in drills of two rows at a foot asunder, and three-feet intervals between, for the purpose of being wrought by the common plough, and which were three times ploughed, and once hand-hoed during the time the crop was in the ground; it was found, on the crops being taken up, that the part set in drills was by much the best, notwithstanding it had been planted with only about two-thirds the quantity of seed. And it is asserted that, in the sowing of turnips by means of the drill, besides their being better, there is a saving of four shillings the acre in the after-culture of the crop, when drilled at 12 inches apart, and an opportunity afforded of performing the business in a much more effectual manner. And the experiments of another cultivator of this useful root, seem also to show that a greater weight of produce may be obtained by sowing in drills on one-bout ridges, at twenty-seven inches distance, than in the broadcast method, or even in drills, on a level surface at twenty-one inches.

"In regard to the practice of dibbling, though it may, as has been already observed, in particular cases and circumstances of soil and preparation, when correctly performed, have a degree of superiority over the broadcast method, from the circumstance of more air and moisture being admitted to the plants, and where the custom of hoeing prevails, from the soil being more fully stirred; yet from the expense and difficulty that attend it, and its being constantly liable to be performed in an improper manner, it would seem to be not only less advantageous than the drill method, but less capable of being generally applied.

"But whatever may be the advantages of particular methods of sowing, or in whatever manner the crops may be put into the soil, it will constantly be necessary to attend to their being kept as perfectly clean and free from weeds as possible, by some means or other; as it is utterly impossible, from the closeness and the want of free admission of air, as well as the great consumption of nourishment that must be daily drawn from the soil, in cases where such a number and variety of plants are suffered to vegetate together, that there can be abundant crops of grain, if the business of eradicating them be either wholly neglected, or only performed in a partial manner. Where the mode of putting in the seed will admit of it, care should be taken to have the intervals, or portions of ground between the rows, as frequently stirred as may be sufficient for affording the most full and perfect vegetation and ripening of the crop.

"In the broadcast husbandry, from the plants standing in an irregular manner, the weeding and cleaning can only be performed by the hand, with implements of either the forceps or hand-hoe kinds. But where the drill system, or that of dibbling, prevails, as there is more regularity in the state of the crops, this may be executed in other ways, and in a more easy, expeditious, and effectual manner, by the use of horse-hoes, or other implements of the same kind, drawn by horses."

ON PLOUGHING DEEP OLD LAY GROUND.

TO THE EDITOR.

Sir—Many of your readers have no doubt observed the singular appearance presented to the eye, by grain crops sown on lay ground, ploughed in the ordinary manner. Oats, for instance, grow in a number of parallel lines, as if they had been drilled into the land, whilst the spaces betwixt line and line are occupied with a confused mass of grass and weeds, which tend to impoverish the ground, without affording the smallest benefit to the farmer. This manifest defect proceeds from the imperfect mode of ploughing the land, by which the sward remains in a great measure unbroken, except in the furrows opened by the plough-share. Hence the roots of the grass and weeds remain in full vigour, and the germs of the grain derive their sustenance in the lines made by the plough-share, solely from the slight and half-broken cover of mould spread over the seed by harrows; because they can by no means send their young and tender fibres through the other portions of the tough sward, pre-occupied as they are by other plants. Add to this, that the sward itself, and the various plants to which it gives nourishment, undergo no decomposition in the course of the year, but the roots of the grass and of the other vegetables retain the vital principle, and bind the soil together—so that in the succeeding season it is turned up by the plough in connected masses, or seed beds of weeds, and is then torn by the harrow into detached, and as it were frizzled lumps.

Now, Sir, I beg leave to point out to your readers' attention, a particular mode of ploughing, by which (I speak from long experience) all these defects may be obviated.—In preparing deep old lay ground for a crop, I have been accustomed to put two ploughs into the field at once. When the first furrow of any ridge was to be opened by one of these ploughs, care was taken that the sward or sod was cut as thin and as neat and regular as possible, and when the horses had proceeded a short distance up the ridge, the second plough was entered in the very same furrow which the former one had opened, and every exertion was made to turn up the mould from as great a depth as possible, and to bury with it the thin cut sward, so as to render it invisible to the eye. Every furrow in each ridge was managed in the same manner, and a field when finished in this style, exhibited a fine surface of mould in most complete tilth, and ready to afford proper cover to the seed of the future crop, in every portion of the land.

The advantages resulting from this kind of labour are obvious—For first—The young shoots of grain come up with great regularity, and the roots derive nutriment from each portion of the adjacent ground, freed from any struggle with the roots and fibres of the buried grass, &c. 2dly—The sward or sod is so completely turned down, covered and excluded from the operation of the sun and air, that it becomes perfectly rotten, and a complete mass of manure highly advantageous to the farmer in his operations for subsequent crops. 3dly—The ground with a little attention can be kept from weeds during the growing of the first crop, and left in a healthy and pulverized state for any future series which the farmer may wish to adopt.

S.

ON POTATOES,

By Thomas Andrew Knight, Esq. F. R. S. &c.

(From the Transactions of the Horticultural Society.)

(Continued from page 200.)

I do not know how far other parts of England are well supplied with good varieties of potatoes; but those cultivated in this part of the island are generally very bad. Many of them have been introduced from Ireland, and to that climate they are probably well adapted; for the Irish planter is secure from frost from the end of April nearly to the end of November: but in England the Potato is never safe from frost till near the end of May; indeed I have seen the leaves and stems of a crop, in a very low situation completely destroyed as late as the 13th of June, and they are generally injured before the middle, and sometimes in the first week of September.

The Irish varieties, being excessively late, are almost always killed by the frost whilst in full blossom; when omitting all consideration of the useless expenditure of manure, it may justly be questioned whether the tubers of such plants, being immature, can afford as nutritive, or as wholesome food, as others, which have acquired a state of perfect maturity.

The preceding statement will I trust point out to the Horticultural Society the importance of obtaining improved varieties of the Potato, and I believe no plant existing to be more extensively capable of improvement, relatively to the climate of England; and if practical evidence were wanted to prove the extent, to which the culture of the Potato is calculated to increase and support the population of a country, Ireland amply affords it; where population has increased amongst the Catholic poor, with almost unprecedented rapidity, within the last twenty years, under the pressure of more distress and misery, than has perhaps been felt in any other spot in Europe.

I shall conclude my present communication with some remarks upon the origin and cure of a disease, the Curl, which a few years ago destroyed many of our best varieties of the Potato; and to the attacks of which every good variety of the Potato will probably be subject.

I observed the leaves of several kinds of potatoes, which were dry and farinaceous,* that I cultivated, produced curled leaves, whilst those of other kinds, which were soft and aqueous, were perfectly well formed; whence I was led to suspect, that the disease originated in the preternaturally thickened state of the sap, in the dry and farinaceous varieties. I conceived that the sap, if not sufficiently fluid, might stagnate in, and close, the fine vessels of the leaf during its growth and extension, and thus occasion the irregular contractions which constitute this disease: and this conclusion, which I drew many years ago, is perfectly consistent with the opinions I have subsequently entertained, respecting the formation of leaves. I therefore suffered a quantity of Potatoes, the produce almost wholly of diseased plants, to remain in the heap, where they had been preserved during winter, till each tuber, had emitted shoots of three or four inches long. These were then carefully detached, with their fibrous roots, from the tubers, and were committed to the soil: where having little to subsist upon except water, I concluded the cause of the disease, if it were the too great thickness of the sap, would be effectually removed; and I had the satisfaction to observe, that not a single curled leaf was produced; though more than nine tenths of the plants, which the same identical tubers subsequently produced, were much diseased.

In the spring of 1808, Sir John Sinclair informed me that a gardener in Scotland, Mr Crozer, had discovered a method of preventing the curl by taking up the tubers before they are nearly full grown, and consequently before they become farinaceous. Mr. Crozer, therefore, and myself appear to have arrived at the same point by very different routes; for by taking his Potatoes, whilst immature, from the parent stems, he probably retained the sap nearly in the state to which my mode of culture reduced it. I therefore conclude that the opinions, I first formed, are well founded; and that the disease may be always removed by the means I employed, and its return prevented by those adopted by Mr. Crozer.

I sent to the Board of Agriculture the substance of the preceding remarks on the origin of the curl, in the year 1808; but I do not know whether that account has been published, or not.

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* Mealy.

REMARKS ON RURAL ECONOMY.

(From the Munster Farmers' Magazine.)

There is no one article of husbandry, particularly for winter food, so profitable and essentially material to a farmer in this country as potatoes. No other species of food (quantity and quality considered) can bear any competition with them. From the meanest hovel to the palace, they are in high estimation, and on no other bulbous root will cattle and sheep thrive so well and fatten so quickly. Since I have been in the habit of feeding my carriage, riding, and farm horses on steamed potatoes, the saving both in hay and oats has been materially essential, and my horses have been always in better heart and condition.—Last February on account of the approaching scarcity, I found it absolutely necessary to discontinue my potato feeding system; my cows were turned out in the day time, and fed on hay only at night. My dairy decreased one half in milk, and my fat cows fell off rather than improved for want of the potatoes. My horses instead of four pounds of oats in the morning, and fourteen pounds of the best potatoes, steamed and mixed with one of bran, in the evening, were regularly fed with twelve pounds of oats each day at three different feeds, and had plenty of the sweetest hay; notwithstanding they visibly declined both in spirit and flesh. Though I set so high a value on potatoes, yet I wish by no means to deter gentlemen farmers from trying experiments respecting other roots and vegetables, viz. turnips, carrots, parsnips, cabbage, lucerne, sainfoin, &c. &c. &c. I am sure it would tend much to the advantage of agriculture, if the expense, at which these roots and vegetables, &c. were raised, their value in fattening and feeding cattle, and the effect of their culture on succeeding crops were accurately ascertained and given to the public, through the medium of the Munster Magazine. A well managed farm should also possess kind horses, good tackling, willing labourers, with the best and most simply constructed farming apparatus. To prevent waste of labour the occupier of a well managed farm should know, not only how work ought to be executed, but also what constitutes a fair day's work at any business. This being understood by his people, he needs no other steward than small rewards seasonably given to the most diligent and expert.

In the Munster Magazine of 1811, I gave an account of the management of my farm for that year, and my mode of cultivating potatoes; since that time I think I have made some progress in improvement and for an Irish farm, managed merely by a practical farmer, cannot consider it despicable. Yet notwithstanding my unwearied endeavours twice to obtain the premium for the best managed farm in my district; I have been each time disappointed, the premiums having been adjudged to more worthy competitors and had there been a second premium, I doubt much whether the merits of my neighbour and friend Mr. Hastie would not have been preferred to mine. The agricultural improvement of this district has of late been rapid and I think very likely to be progressive, owing much to its Baronial Farming Society, and to the unweared exertions of the Cork Institution, to which the whole province of Munster is infinitely indebted. T. W.

(From the Irish Farmers' Journal.)

Sir—As the pages of your very valuable paper are constantly unfolding to the public, matters both instructive and interesting, you will please to insert the following, if you think it in any measure deserving of your notice:—

ON BEES.

These industrious, delicate insects, if carefully attended to, would be a most valuable accquisition to the peasantry of Ireland.—First, on account of the simple, but at the same time, systematic management they require; and secondly, the non-expense of feeding, which no other creature that is destined to work for the use of man is exempt from. Under these circumstances, no peasant family, nor farmer, should be without such resources as these creatures would afford, whether we consider their productions as disposable articles, or delicacies and comforts for the table, by the rich beverage which their labours produce. The resources above mentioned, being within the reach of every resident peasant, it is strange that such opportunities are so shamefully neglected, by a people who are literally starving, especially in winter, when milk is not to be procured throughout the country, which want might be amply supplied by every family being able to have a quantity of mead for their homely use, at least during the best part of winter, as a substitute for milk with their potatoes.

Now, as one hive or stock of bees, may be purchased for fifteen shillings or a pound, if it be a good heavy top, or first swarm, the ensuing season it will produce two very good swarms that will stand the winter, and the parent hive will be strong for the next season by placing what is called a raiser under the hive to enlarge it, in order to prevent a cast, that is, a third weak swarm, that would be unable to stand the winter, and would reduce the parent hive to a weak state, which would prevent an early swarm the next season — Therefore, as these creatures are so prolific, one good hive or stock, in the short space of a year, by the two swarms increase, will be a sufficient store for annual breeding, as three brood stocks will give six disposable swarms, which, to a peasant family, whether sold in the combs, or brewed into mead, must be a resource and comfort, which the now suffering peasantry are entire strangers to.

Now, as all human speculations and pursuits are subject to failures, bees are, in many instances, uncertain, and depend very much upon seasons; but when the store or brood stocks are strong, they swarm early, and early swarms have more time to labour, and lay in a good store, than those produced late in the season. As hives are the only expense these creatures require, they should be made close and strong, in which case they will stand for several seasons, and should be always washed and well cleaned previous to hiving the swarm. Most people rub their hives with bean leaves and cream, thereby thinking to entice the bees to their new intended residence; but this is a useless practice, for the new swarm picks off every particle of what has been laid on, and smear it over with a preparation of their own, still as they advance their comb-work, and as to eating, they will not notice it as food, even if it were left at their entrance into the hive, or any other thoroughfare to their habitation. Bees may be driven out of one hive into an another, and would be a very humane practice to prevent smothering, if it were attended with a saving of those creatures' lives; but that is not the case, for then they are without food and will starve, which is rather more cruel than to smother them. The manner of driving them from one hive to another, is very simple, and is as follows: invert the hive the bees are in, and place an empty one over it of the same size, so as that none of them may escape, and beat the under one with a rod or switch, and the bees will ascend, and go into the empty hive, for they cannot endure their abode to be insulted, neither can they suffer it to be inverted, for they will not remain in a hive turned up-side-down.

J. M.

INTRODUCTION and CULTURE of POTATOES.

To the great Sir Walter Raleigh, Ireland is indebted for the potato. That illustrious adventurer, whose life was the forfeit of an expedition he had undertaken to possess himself of American plunder, on his return from that unfortunate voyage, put into Kinsale in distress, made a present of a few potatoes, and was the first who introduced them into the British dominions; but like the mismanagement above mentioned, this valuable acquisition was near being lost, for Sir Walter having left his rich (although at that period humble) present, the natives were ignorant of their culture and use, and after a slovenly attempt at planting, &c. their tops were thought to be the precious part; but being found disagreeable, were thrown away, until some children happening to root up a few of the potatoes with the withered stalks to burn as fuel, they were roasted in the fire embers, by which accident their properties were discovered, and improved to the palate and taste of the natives.

As potatoes are of foreign origin and of tender character, the vicissitudes of seasons, modes of management, and soils, give them a variety of taste and flavour, which no other vegetable is subject to, or at least to such a degree. Turnips, parsnips, &c. retain their taste & flavour, however different their culture and the soil in which they are produced may be. But the case is different with potatoes, therefore their cultivation requires a share of science which many people are not aware of. If potatoes be planted in ridge, narrow ridges will succeed better than broad ones—and, however strange it may appear, if they run east and west, will produce more than if they run north and south; six feet wide is sufficient for any ridge, with three feet wide for the furrow or spit for covering. In planting on an old sod, or what is called lea ground, most farmers plough and harrow the ridge, but not the furrow—this is a bad practice, and deprives the ground at least of a season's fertility—for if the ridges were left in the lea state, and the furrows ploughed and shovelled on the ridges, the produce would be the same, the potatoes more clean and free from worms or underground vermin, and the ground would retain the stamina for an ensuing crop, which it would lose by being ploughed. Even though the ridges should not be ploughed, the furrows should in no case be laid on in large spade-fulls, for if not well chopped and mashed, it is the ruin of the crop, and in that process there is a danger of cutting the seed. Therefore, the best and only safe method is to dig the spit, and mash it in the furrow, and then shovel it on, as a first spit on the potatoes. This may appear tedious, but if put to trial it will be found more expeditious than the old practice. In all cases of drilling and ridge planting, the drills and ridges should be run east and west, except it should appear necessary for draining in winter. Ridged potatoes are always superior in strength and flavour to those produced in drills; but the drill gives the advantage in the quantity of produce and the facility of planting, and the manure goes much farther than if planted in ridges—beside, the weeds are smothered in landing the potatoes, and the whole performed by horse labour, which in many places may be an object of much importance to individuals engaged in farming pursuits. I am, &c.

A Potato Planter.

TURNIP HUSBANDRY.

(Continued from page 184.)

Whatever grain may have been sown after the turnip crop, the land ought always to be sown off with rye grass and clover; for it ought to be an invariable rule in husbandry, to lay down land to grass in good condition, both as to cleanness and richness.

The customary mixture of grass seeds, for dry turnip soils in good condition, is rather less than a Winchester bushel of good clean rye grass seeds, ten pounds of red clover, and two pounds of white clover, to the English statute acre. To this some add two pounds of yellow clover, and one pound of rib grass, proportionally diminishing the quantity of red clover.

This is a very proper mixture, if the land is meant to remain in grass for two years or more. But, if for one year only, there is no occasion for any other seed, besides rye grass and red clover; and half a bushel of good rye grass to the acre will be quite enough, with twelve pounds of red clover.

After the land has been one or more years in grass, it may be broken up for oats, which may be immediately succeeded by turnips, and these again, as before, by wheat, barley or oats, with grass seeds.

But as this plan may throw rather a larger proportion of the farm into turnips, than dung can be procured for, a crop of drilled beans or peas may be interposed between the oat crop following lea, and the subsequent turnip one.

If the soil is very good, and in high condition, the grass may be eaten bare about the end of July, then broken up, worked as fallow, and sown with wheat in October or November. Where this plan is meant to be followed, the grass seed mixture ought to have very little, perhaps no rye grass. Fourteen or sixteen pounds of red clover to the English statute acre may, in this case, be necessary; and according to this plan, the grass ought to be eaten by sheep, which may be folded on, in the way directed for eating off turnips. In this case, the wheat ought invariably to be followed by turnips, to restore fertility to the soil.

Though an enemy to rigid systems of rotation, because failures of particular crops, especially of the grass one, may render them impossible to be punctually followed; yet, on every well conducted farm, there ought to be some rule or principle of management. One general rule is or ought to be, to have as much of the land in turnips as can be properly worked and manured. A second, is to keep as much of the land in grass pastured by sheep, as will continue to be profitable. A third, never, upon any account, to have two white corn crops in succession.

On these principles, the following systems of rotation may be held in view, as directions, not as absolute laws of proceeding.

FIRST,

1. year, Oats, or Wheat, from Lea.
2. —— Turnips, with Dung.
3. —— Wheat, Barley, or Oats, with Grass Seeds.
4. —— Grass: and round again as before.

This is a very good plan near a large town, where dung may be purchased, or on the sea coast, where sea weed can be procured. If the lea is broken up by what is called a rag fallow for wheat, in the first year, wheat certainly ought not to form the crop of the third year. I have succeeded with two wheat crops in rotation, but do not think it a safe practice.

In that successful case, the first wheat crop followed drilled beans, which had a thin dunging: this was immediately succeeded by well dunged turnips, eaten by sheep; and that again by wheat and grass seeds. This second wheat crop produced twenty-two Winchester bushels from each English acre.

SECOND,

1. year, Oats, or Wheat, from Lea.
2. ...... Turnips, with Dung.
3. ...... Wheat, Barley, or Oats, with Grass Seeds
4. ...... Grass.
5. ...... Grass: and so round again.

OR, THIRD,

1. year, Oats, or Wheat, from Lea.
2. ...... Drilled Peas or Beans.
3. ...... Turnips, with Dung.
4. —— Wheat, Barley, or Oats, with Grass Seeds,
5. —— Grass: and so round again.

(To be continued.)

CURRENT PRICES IN DERRY.

Oatmeal,	...	14	6	*to*	15	6	*per cwt of* 120*lb.*
Oats,	...	0	10	–	1	0	*per stone.*
Barley,	...	1	0	–	1	4	
Potatoes,	...	0	4	–	0	5	
Beef,	...	0	5	–	0	7	*per pound.*
Mutton,	...	0	4	–	0	7	
Veal,	...	0	6	–	0	10	
Pork,	...	34	0	–	37	6	*per cwt. of* 120 *lbs.*
Butter,	...	0	10	–	0	11	*per pound of* 18 *ozs.*
Flax,	...	45	0	–	56	0	*per cwt. undressed.*

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
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AGRICULTURAL EDUCATION.

Institutions for the instruction of mechanics have been found productive of effects surpassing even the most sanguine expectations. The example of Glasgow has been followed in London, Manchester, Leeds, Aberdeen, &c.

If, in the case of tradesmen, *knowledge* is found to be essential to the successful prosecution of their employments, and if, in fact, the communication of that knowledge is improving them with astonishing rapidity, in point of usefulness and respectability—can the conclusion be resisted, that similar measures would be equally beneficial with respect to farmers. Let it not be said that the business of the farmer is so simple that it requires no stretch of thought, no accuracy of observation, no perseverance of attention, nor pertinent reasoning. Every one who is but slightly acquainted with the subject, will readily admit that the farmer who deserves the name, should possess a great variety of knowledge, and a methodical turn by which to turn that knowledge to account. And that even with these advantages, and with all the aids he can derive from reading and observation, he is liable to failures and to unaccountable disappointments—because, in fact, there is no art which more requires all the resources of ingenuity, or affords greater scope for the display of talent, than scientific agriculture.

To come to particulars—how little is yet known with sufficient accuracy with respect to agricultural chemistry. One of the first geniuses of the age has opened the path, and shewn to others in what way the procedure is to be carried on, in order to advance to perfection—but a few steps have yet been made. One thing, however, Sir H. Davy has clearly shewn, that he who would be a master of agricultural knowledge, must know the principles of chemistry, and that these principles will infallibly lead to results highly beneficial to the community.

In proportion, says that writer, as science advances, all the principles become less complicated, and consequently more useful. And it is then that their application is most advantageously made to the arts. The common labourer can never be enlightened by the general doctrines of philosophy, but he will not refuse to adopt any practice, of the utility of which he is fully convinced, because it has been founded on these principles. The mariner can trust to the compass, though he may be wholly unacquainted with the discoveries of Gilbert on magnetism. The dyer will use his bleaching liquor, even though perhaps ignorant, not only of the constitution, but even of the name of the substance on which its powers depend. The great purpose of chemical investigation ought, undoubtedly, to be the method of cultivation, but to this end general scientific principles, and practical knowledge are alike necessary.—The germs of discovery are often found in rational speculations; and industry is never so efficacious as when assisted by science.

It is from the higher classes of the community—from the proprietors of land—those who are fitted by their education to form enlightened plans, and by their fortunes to carry such plans into execution; it is from these that the principles of improvement must flow to the labouring classes of the community—and in all cases the benefit is mutual; for the interest of the tenantry must be always likewise the interest of the proprietor of the soil. The attention of the labourer will be more minute, and he will exert himself more for improvement, when he is certain he cannot deceive his employer, and has a conviction of the extent of his knowledge. Ignorance in the possessor of an estate of the manner in which it should be treated, often leads either to inattention, or injudicious practices in the tenant or bailiff.

Sir Humphry then goes on to shew that the necessary knowledge in chemistry, for pursuing experiments on soils and manures, is a matter of no great difficulty. Nothing can be more easy than to discover if a soil effervesces, or changes colour by the action of an acid, or whether it burns when heated;

or what weight it loses by heat—and yet these simple indications may be of great importance in a system of cultivation.

It is a good many years since Sir Humphry wrote those encouraging words, to allure the British nobility and gentry into the walks of agricultural science—that his expositions and instructions have been gratefully and profitably listened to in other parts of the empire, there can be no doubt. But in this quarter, I mean in the N. W. District, we are, (as it were, just opening our eyes to behold our own ignorance. Our people generally ignorant as farmers, and often in depressed circumstances, have been left too much to themselves, and they are only begun to introduce improvements which, in other places, have been long adopted. The question is, how is the desire of improvement to be gratified most safely where it exists, or to be excited where it is wanting. Do we abound in such proprietors as Sir H. Davy addressed, *fitted by their education to form enlightened plans, and, by their fortunes, to carry such plans into execution.* If there are many who answer to this description, it is not on this neglected land that the rays of their knowledge descend, or that the streams of their wealth diffuse themselves. Of those who reside on their estates, there are some, no doubt, who are qualified to disseminate knowledge among their inferiors, and who have good sense and spirit enough to discharge in some measure, at least so important a duty. But, if this paper meets the eye of any such gentlemen, they will be among the foremost to perceive that if the tenantry in this district are to be elevated in the scale of improvement and respectability, so as to be on a par with the more favoured parts of the empire, and if that is to be done in any reasonable period of time, the precepts and the example of the few resident gentlemen amongst us, however zealous or however enlightened, will be of little avail.

Accordingly when the project of an Agricultural Seminary was first submitted to the public, those landholders who have shewn the liveliest interest in the welfare of their people, expressed the most favourable opinion of a plan, which has for its basis the improvement of the rising generation.—There appears to be no great difficulty in the matter, it is simply engrafting agricultural instruction on the ordinary business of a school, and by introducing an improved style of education, applying an easy and obvious remedy to the ignorance, indolence, and consequent debasement which are still too prevalent amongst us.

Chemistry has been mentioned as a branch, a knowledge of which is important to farmers—there are various other topics such as botany, the veterinary art, &c. which have not been adverted to, but the study of which would be both easy and useful. Not that it is intended to convert the farmer into a bookworm or a philosopher—by no means. The great business of the agricultural school should be practical farming—actual employment in country affairs—this, however, may be done and the necessary learning not be left undone. The following judicious remarks of Sir H. Davy, seem to be applicable to this point:—

"It has been said, and undoubtedly with great truth, that a philosophical chemist would most probably make a very unprofitable business of farming; *and this certainly would be the case, if he were a mere philosophical chemist; and unless he had served an apprenticeship to the practice of the art as well as to the theory.* But there is reason to believe, that he would be a more successful agriculturist than a person equally initiated in farming, but ignorant of chemistry altogether; his science, as far as it went, would be useful to him. But chemistry is not the only knowledge required, it forms a small part of the philosophical basis of agriculture—but it is an important part, and whenever applied in a proper manner must produce advantages."

The Mechanic's Magazine is intended to diffuse among mechanics a knowledge of improvements and discoveries in arts and manufactures, and in those branches of science which have a relation to practical processes and operations. Such a work if judiciously conducted will be extremely useful. Much has been done to perfect the mechanic arts in Britain; but much more would be done, were science and philosophy to lend their lights to guide the hands of the artizan. It is a lamentable truth that our operative tradesmen are almost universally ignorant of those branches of science which are connected with their professions. Those of them who attempt new combinations or improvements, generally waste much time, labour, and money, in making experiments which serve to no other purpose, than to teach them some elementary truths, which a little scientific instruction would afford them without trouble.—Nine-tenths of their projected improvements are delusions originating in their ignorance; and when they do hit upon something really useful, they work their way to it through twenty fallacies. Chemistry and mechanics (the latter embracing also geometry and algebra) are the *two eyes* of the useful arts; and were persons who engage in mechanical projects to begin by acquiring a knowledge of these they would place themselves on vantage ground, and save much labour, and avoid many errors afterwards. The Mechanics' Institutes, established in Glasgow and London, are likely to excite the emulation of other cities. They are schools or lecture-rooms which have been opened for the express purpose of bringing within the reach of artizans, those branches of knowledge so necessary for attaining excellence in their respective occupations. For the same laudable purpose, we are informed by the papers, the Royal Dublin Society, anxious to render the lectures of their institution as advantageous as possible to the public, have directed each of their professors to deliver a course of lectures in the evenings, expressly calculated for the working classes and artificers, and FREE to this description of persons.

A great part of the machines made use of in manufactures, in which labour is most subdivided, were originally the inventions of common workmen, who being each of them employed in some very simple operation, naturally turned their thoughts towards finding out easier and readier modes of performing it. In the first steam-engines, a boy was constantly employed to open and shut alternately the communication between the boiler and the cylinder, according as the cylinder either ascended or descended. One of these boys, who loved to play with his companions, observed that by tying a string from the handle of the valve which opened this communication, to another part of the machine, the valve would open and shut without his assistance, and leave him at liberty to divert himself with his play-fellows. One of the greatest improvements that have been made upon this machine since it was invented, was in this manner the discovery of a boy who wanted to save his own labour. It has since been called after the name of the inventor, the *Scoggan.*

The following instance of the power of moisture in overcoming the greatest resistance is given in the London Mechanics' Magazine. It is the method employed in procuring millstones. When a mass of this stone has been found sufficiently large, it is cut into the form of a cylinder, several feet in height; and the question then is, how to cut it into horizontal pieces, to make as many millstones. For this purpose, circular and horizontal indentations are cut quite around it, and at proper distances, according to the thickness to be given to the millstones. Wedges of willow, dried in an oven, are then driven into the indentations by means of a mallet. When the wedges have sunk to a proper depth, they are moistened, or exposed to the damp of the night, and next morning the different pieces are found separated from each other. Such is the process, which according to M. de Mairan, is employed in different places for making millstones.

The ingenious writer endeavours to account for the manner in which this amazing effect is produced, and conceives it may be attributed to capillary attraction.—(*Mechanics' Magazine, No.* 9.)

BUTTER TRADE.

The following extract of a Letter, received by a most respectable mercantile house in Limerick, gives some valuable information relative to the salting of Butter.

London, 11th May, 1824.

"With respect to the quality of Limerick butter, on which subject you touched in your letter of the 12th ult. there never was a season it gave such general satisfaction as the last; several purchased it extensively from us, who very rarely purchased it before, one chief cause of which was, its being less salted than heretofore. Notwithstanding its mildness, still it has kept as well as at any other season, as far as we have been enabled to learn, which proves that butter, originally good and well made, does not require so much salt to preserve it as is the opinion of many. Indeed our opinion is, that the article would be still better with even less salt; however it is as well to proceed cautiously in that respect."

ESSAY

On the different Varieties of Brocoli.

BY HUGH RONALD.

(From Transactions of the Horticultural Society of London, Vol. III, page 161.)

The following paper on the cultivation of Brocoli, may be the means of gratifying some of your readers, and according to my experience, the rules here exhibited are the best of any hitherto given. T.

Description.	*Time for Sowing.*	Distance at which they should be planted.	*Time of producing.*
1 Purple Cape, or Autumnal Brocoli... *(Sometimes injured by cold)*	Middle of May or beginning of June........... July or August	2 feet	In August to December. In June & July if not injured by the frost of winter.
2 Green Cape, or Autumnal B, ... *(This differs little from the preceding)*			
3 Granges early Cauliflower B......... *(A tolerably hardy kind)*	From the beginning of May to the end of June	2	From Michl. to Christmas.
4 Green close headed Winter B.........	End of May	1½ to 2	Nov. Dec. Jan. and Feb.
5 Early Purple B.........................	April .... June..	3	Begin to produce in Nov. In March and April.
6 Early White B.........................	In February or March, on a slight hot bed, transplanted out when about 4 inches high, and finally planted by the end of April......	2 to 3	November until Christmas.
7 Dwarf Brown close headed B.........	About the middle of April..........................	2	March and April.
8 Tall large headed Purple B............	About the end of March..............................	3	March and April.
9 Cream coloured B........................	Middle of April..	3	February, March, and April.
10 Sulphur coloured B..................... *(A hardy and valuable sort)*	April	2	In April and May.
11 Spring White or Cauliflower B......	March	3	In April and May.
12 Late Dwarf close headed Purple B...	April	1½ to 2	In April and May.
13 Latest Green, or Siberian B...........	The end of April	2	The whole of May.

A short View of that mode of treatment which has appeared to me to succeed best—it being similar for all the different sorts.

The seed beds should be prepared of light rich mould, well dug and dry, watered the evening before sowing. The seeds must be thinly sown, and the beds should be covered with mats or litter till the plants appear; the covering may then be removed, and the plants watered occasionally, as the state of the weather requires—should that continue very dry, the best method is to transplant, when the plants are about two or three inches high, into other beds about four inches asunder.—Being several times refreshed by sprinklings of water, they will, in a fortnight or three weeks, be sufficiently strong for a second remove. This mode offers some advantage, in giving time to clear off any crops of peas, &c. thereby obtaining ground which could not otherwise be conveniently had at the first season of planting out. The four first sorts on the list, which I consider as congeners, should be only once transplanted, as the check their removal occasions is apt to produce the heads prematurely, which in that case will be small, and indifferent in quality. If the season be showery, it will be needful to cover the beds as soon as sown, with netting, to keep off the birds, also to sprinkle the plants when they appear with lime water, or to strew on them fresh slacked lime, to destroy the slugs. In this case, when the plants are six or eight inches high, they may be planted at once at the distance recommended for each sort.

Brocoli in general succeeds best in a fresh loamy soil, where it comes more true to its kind, and is hardier without dung—but if this situation cannot be had, deep digging, with plenty of manure, is the only remaining alternative to procure good crops.

B. COVENEY'S ACCOUNT OF HIS FARM.

This Magazine cannot be better employed than in describing the operations of spirited and improving farmers. We had hoped for such communications as the following from some of our neighbours, but whether it be from carelessness, or from humility, or from pride, the N. W. farmers have not thought fit to publish their speculations in writing. In the present instance a Munster-man is about to afford us instruction. He was induced, as he informs us, to put in his claim in the year 1813, for the reward offered by the Carrigaline Society, to the person who should appear to have the best managed farm in that district. His name is Bartholomew Coveney, a working farmer, and he was led to become a candidate, as he himself observes, "not so much from the hope of obtaining the premium, as from a desire to diffuse his method among his fellow-working farmers. His statement, drawn up by himself, was addressed to W. W. Newenham, Esq. President, and the other members of the Society, contains a plain and faithful account of the management and produce of his little farm of forty-four acres.

This farm he took in 1806, when it was without dwelling-house, potato-house, barn, stable, house or linney for farming utensils, to preserve them from the inclemency of the weather, or even a kitchen-garden, all of which he now has. "I set to work rapidly," he says, "continued at the house and offices, from one to another alternately, till I completed them to my great satisfaction, as they are very interesting to me now." His friends, it seems, admonished him to surrender his farm, instead of encountering the heavy expense of those buildings—he, however, persevered, and not only paid his rent punctually, but even discharged the back gale with which his landlord would have indulged him. He was enabled to do this, by attention to manure. In his own strong expression—"*Manure put pinions on me to fly above the world; thank God!*" To make this manure he kept his few cattle, almost the year round, in their respective houses, so that he had immense heaps of compost; feeding the sheep and swine always as well as the cows and horses, on good clover. The sheep and swine have a back yard, well walled in, by which means they are protected at night from dogs and thieves. By this system, he says, he had abundance of manure. His process for making compost is, to lay some hundreds of butts of rich bog mire and mould; over this he lays the hot litter of the cattle, which heats and ferments the whole, keeping always moist with the liquor of a large pond. This pond is supplied with the drainage from the cattle-houses, and with the filth which the rain washes from the yard into it. This pond he estimates as worth £50 a year to him. In dry weather to prepare straw for manure he wets it from this pond, which immediately rots it; for the same purpose he gathers coarse grass, bulrushes, ferns, lodged grass, and whatever else he can get from the bog, the sides of ditches, &c. which he mixes with the straw put under the cattle, and the whole is afterwards wetted in the pond. When he has gone through the operation of wetting and turning his heap of compost, he observes it becomes *mellow and rich*. Another source of profit on which he dwells with satisfaction is, the saving of his own clover and hay-seeds, with which he is always supplied without buying.

His crops, in 1812, were—

	A.	R.	P.
Wheat, very good,	8	0	0
Barley, a fair crop,	3	0	0
Oats, very good,	1	0	0
Potatoes, a fair crop,	6	2	0
Do. drilled, very good,	3	2	0
Clover good, *undoubtedly*,	2	0	0
* New laid down meadow, sown with hay-seed and clover,	5	0	0
Pasture, a wet bog,	5	0	0
	34	0	0

With respect to the pasture he observes—"This I did not yet much improve, except that I clean the drains every year, and overstock it in order to destroy the rushes.

Though the farm contains forty-four acres, the rest is taken up with roads, passages, yards, &c. Small as it is, however, it enables the possessor to support his family in as decent and respectable a manner as any of his station.

Coveney received a Scotch plough, as a premium for drill potatoes. "This plough," he observes, "assists him considerably in softening and cleaning his tillage;" and he accordingly recommended it to many of his neighbours. There is one other practice of this industrious man which cannot be too strongly recommended; he has banished thistles entirely out of his ground, *by always pulling them before they come to shed their seed or injure the crop.*

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* This will afford me to sell £20 worth of hay and hay-seed, and give plenty of fodder till the clover comes for my cattle.

TURNIP HUSBANDRY.

(Continued from page 208.)

Either of these are very good rotations, where no dung can be purchased, nor sea weed procured; as requiring only that one fifth part of the farm be dunged annually. The same rule, of not having two wheat crops in one rotation, is applicable here, as in the first system. Indeed, in the former of these two, where two crops of grass succeed each other, in the fourth and fifth years, it will not be proper to take wheat in the first year of the subsequent rotation; because it is found that wheat, in general, does not sucseed immediately after grass of more than one year old.

It has been already mentioned, that the grass crop of a rotation sometimes fails. In this case, perhaps, the best plan is to substitute drilled peas, followed by barley or oats, and grass seeds; and the amended rotation will then stand thus:—

FOURTH.

1. year, Oats after Lea.
2. —— Turnips, with Dung.
3. —— Wheat, Barley, or Oats, with Grass Seed; which having failed,
4. —— Peas or Beans drilled.
5. —— Barley, or Oats, and Grass Seeds.
6. —— Grass.

I have heard of a rotation being followed in Norfolk, something like the following:—

FIFTH.

1. year, Drilled or dibbled Peas, fom one year old Lea.
2. ...... Wheat.
3. ...... Turnips, with Dung.
4. ...... Barley, or Oats, with Grass Seeds.
5. ...... Grass: and so round again.

On weak lands, where no dung can be purchased, nor any sea weed procured; or where the landlord insists upon half of the land being in grass, which is often the case, especially for the last five years of a lease, the following system will answer the purpose extremely well, but still liable to the accident of the grass crop failing to grow, or dying out in the second or third year.

SIXTH.

1. year, Oats, or Wheat from Lea.
2. ...... Turnips, with Dung.
3. ...... Wheat, Barley, or Oats, with Grass Seeds.
4. ...... Grass. }
5. ...... Grass. } All pastured.
6. ...... Grass. }

It may be proper to mention the method of raising turnip seed. Having procured good seed, as proved by the size, shape, and hardiness of the turnips, select, early in spring, a cart load of the best, chosen by regularity of shape, convexity of the top, and smallness of neck. Transplant these upon a piece of good dry rich soil, at proper intervals, and allow them to ripen their seed, which will be in July or August. Watch them well from birds, when nearly ripe, and afterwards while drying. Cut the seed stems before the seed is dead ripe, tie into sheaves with straw ropes, and win or dry completely. It may then either be preserved unthrashed, in a small well covered rick, or some convenient out-house, till next season; or thrashed out, and preserved in a granary. Next year preserve the whole produce of this transplanted seed, and renew it in this manner every two or three years. It has been fully experienced, that turnip seed repeatedly grown without having been transplanted, is very apt to degenerate. The soil on which turnips ripen their seed, is very much impoverished, and will require to be well manured afterwards.

In many parts of England, hay from old grass land is a very essential part of farm produce; and, in such situations, a vast quantity of dung is employed as top dressing, for the production of hay. It is even a very common condition in leases to lay the whole farm dung on the hay lands; and consequently the arable land is limited, for manure, to such dung, or other substitutes as can be purchased elsewhere. Hence a variety of contrivances have been fallen upon, as substitutes for farm yard dung. But in Scotland, where horses for the mere purposes of luxury, or convenience, or traffic, are not so immensely numerous as in England, the demand for hay does not require so large a proportion of land to be employed in that way; consequently the farm yard manure, generally speaking, suffices for the arable part of farms, where almost only such manure is applied, excepting the addition of lime, or marl, or shell sand, or sea weed, according to situation.

Rape dust is the cake or mash from which rape oil has been expressed, reduced into a gross powder by a mill similar to that for grinding tan-bark. It may be applied to the land, by sowing it by hand from a sheet, just before forming the drills upon which the turnip seed is to be sown. In Norfolk, they have a compound drill machine for this purpose, which distributes the rape dust in small portions into the seed slits, at the same time with the turnip seed, thereby applying this manure, which is reported to be very potent, but of short continuance, exactly to the seeds. It is said that one ton is sufficient to insure a good crop of turnips upon five acres of ground, where the drills, or rather rows, of turnips are only eight or ten inches asunder. Consequently, where they are raised in drills at twenty-eight inches distance, the same quantity of rape dust ought to suffice for a proportionally larger extent of ground.

The short continuance of the fertilizing quality of rape dust is no objection in the turnip husbandry. Sea weed, the most valuable of manures, is exactly in the same predicament. For, if a crop of turnips can be secured upon fit soil, after fertility is absolutely ascertained, by consuming the crop on the ground by sheep, as already observed, the soil is rendered greatly productive, both of corn and grass, and thereby the continuance of fertility is likewise insured, as, by good corn crops, and good grass, either for hay or pasture, an after abundance of farm yard dung, or of fertile lea, wherefrom to raise good crops of corn, and consequently increase of quantity of dung, can never be wanting.

Into this country, some years ago, a variety of rye grass, which only grew for one year, was introduced: from the use of which, very great inconvenience has been experienced, as, in general, land, with us, is continued in grass for three years, sometimes longer. It is unfortunate that there is no means of distingushing this annual rye grass from that which is perennial; as otherwise they might be used according to the future intentions of managing the land. The annual is supposed even to grow more luxuriantly during its solitary year, and would answer admirably where one year of grass only was required; but no more crop is to be expected in the second year than may be produced from fallen seed.

Where land is to be laid down to permanent grass, for two or more years, especial care must be taken to procure perennial seed.

With rye grass seed, as with the seeds of all other grains, I should consider a regular change, from soils of opposite descriptions to that upon which it is intended to be propagated, to be attended with beneficial consequences. Every time of sowing this may not be necessary; but I am convinced that, universally, in agriculture, it is adviseable to vary the crops upon the same soil, and to exchange seeds of all kinds alternately, from strong to light, and from light to strong.

It is of the utmost importance to know that rye grass seed be free from mixture of other seeds. Many careless agriculturists content themselves with the sweepings of hay-lofts which they can procure cheap, under the name of grass seeds. Not to mention goose-grass, which any attentive person can detect, and which is a very coarse grass, I am satisfied that great quantities of bulbous rooted oat grass, and couch or quicken, are sown every year, to the great injury of the farmer, by coarse hay, and by introducing immense abundance of their vivacious roots into the soil, requiring afterwards great care and expeuse to eradicate. On my entry here, I saved a field of hay, almost entirely composed of couch, which I have no doubt had been sown by my predecessor, with seed saved from hay purchased on the slovenly-managed burgess-meadows of Berwick, or bought from the stable-keepers of that place. I this season refused, at a very moderate price, an acre of the finest rye grass I ever saw in seed, certainly second year's crop, merely on account of a thin mixture of couch, evidently growing among the rye grass

Having now completed, to the best of my knowledge and abilities, the task your friendship was good enough to suppose me equal to, I have only to wish it may prove as useful to your friend, as it has agreeable to me in attempting to describe, and for a considerable number of years in executing practically upon my limited scale of agriculture. *R. r.*

FAIRS.—28th, Carricmore, Tyrone—Killileagh, Armagh—Kirkcubbin, Down—Tempo, Magheravooly, Fermanagh. 29th, Bearagh, Gorten, Tyrone—Crosskeys, Cavan—Donegal town—Newbliss, Monaghan. 31st, Crossmaglen, Armagh—Killygordon, Donegal—Liniskea, Fermanagh—Straid, Antrim—Tubbermore, Derry. 1st June, Castledawson, Derry—Castlewellan, Down—Drum, Monaghan—Pomeroy, Tyrone—Redcastle, Donegal—Stragowna, Fermanagh. 2d, Aughnacloy, Newtown-Stewart, Tyrone—Castleblaney, Monaghan—Machremore, Donegal—Maguire's Bridge, Fermanagh. 3d, Ballintoy, Antrim—Bryansford, Kilmore, Down—Fivemiletown, Frederickstown, Machrecregan, Tyrone—Middleton, Armagh. 4th, Ahoghill, Antrim—Cross, Mahoolan, Derry—Jonesboro', Keady, Armagh—Newtown-Hamilton, Moy, Tyrone. 5th, Ballina, Cavan—Ballinode, Monaghan—Belcoo, Fermanagh—Pettigo, Donegal—Pointpass, Armagh.

bear him from the ordeal with honour, not alone untarnished, but encreased in brightness. They teach that there has grown up a public voice, which hitherto confined by various causes, can no longer be pent up, and which proclaims that retribution is a great law of our nature, and that the generous and beneficent *alone* can be approved objects of respect and gratitude. A gratifying reflection for such characters as the Patron of our Society! But I have wandered from the more immediate object of my letter. It is clearly of the first importance that something in the way of general instruction, in the most necessary arts of life and in the sciences connected with them, shall be provided for this country. The North West Society has repeatedly applied to Government for aid, and has latterly sent forward a third petition to Parliament on the subject, but the road to parliamentary attention can only be trod by those who have the necessary clue. The history of this petition, and the thing itself we shall have in time—meanwhile, let it suffice to say we must depend upon our own resources. Could there not be found within the North West District, a sufficient number of subscribers of ten pound shares to set the thing afoot?—say two hundred. If this number cannot be found, the failure will throw light on the state of our society. If on such an occasion our great absentees shall keep their purses closed, they will furnish an unanswerable argument in favour of a tax on their receipts. If they come forward as they ought, the object is accomplished, and its success will lead to greater matters. Here for the present I conclude.

S.

The following is the article alluded to by our obliging correspondent:—

To the Editor of the Ulster Farmer and Mechanic.

Sir—As several copies of your Farmer and Mechanic come to this part of the country, the various subjects treated of excite a good deal of conversation among our Farmers, and this I think is one of the many advantages which your publication is calculated to produce. Whatever tends to draw the attention of the farmer class to topics connected with their profession, is sure to be productive of good consequences. It excites them to enquire, to read, to think, and to make trials according to the improved practices of others. This is achieving a great deal, and I should be glad to see our landed proprietors giving to this spirit that encouragement and countenance which its importance deserves. This country has long felt the baneful consequences resulting from political and party feelings engrossing the attention of the working class of society; they became ale-house politicians, champions of parties and factions, and by devoting their time and attention to these pursuits, they neglected those duties, the proper attention to which would have bettered their condition in life, and would have conferred peace and comfort on their families. I am happy to say much of that spirit has subsided, and more industrious, correct, and peaceful habits are making rapid progress. The planting of schools in different parts of the country has done much in effecting this, by diffusing wholesome instruction, and affording the means of education to all classes. Next to education in point of importance, is the duty of encouraging regular habits of industry.—The most virtuous and pure maxims will fail of making any lasting impressions upon the mind or conduct of an idle person. The mental constitution of man is so formed that employment is essential to the preservation of virtue, and idle habits lead invariably to depravity. These sentiments being allowed, it is not requisite for me to say more to enforce them. But I cannot quit the subject without calling upon our country gentlemen, to evince greater ardour in patronising whatever has a tendency to encourage industry and all the other auxiliaries of virtue.—Among these I think societies should be formed for offering premiums to those who excel in any of the branches of agriculture, such as the culture of grain of various kinds—the rearing and feeding of cattle—enclosing, draining, and reclaiming of land—planting fruit trees—culture of willows—making of butter and cheese. This last article requires much improvement to enable it to meet English cheese in our markets. I am aware that most of these topics have been treated of in your useful publication, and many farmers have been led to adopt some of the improvements that have been pointed out in it. But in order to give more effect and power to these suggestions and improvements, our landed gentlemen should step out and take a distinguished and leading part in these important concerns. I should therefore, be glad, if some of them would call a public meeting of persons desirous of promoting such objects, in order to devise the best measures for attaining the end in view. In what I have said I have confined my observations principally to agricultural affairs, but the meeting which I propose should also embrace some of the most useful arts, such as plough and cart making, with other farming utensils; and also the various branches of weaving linen and cotton. I have thus given you my ideas upon this subject, and though they are very crude and imperfect, perhaps they may excite attention, and bring forth more valuable suggestions from some better informed correspondent than your obedient servant,

AIMWELL.

Ballymena, 18th May, 1824.

FISHERIES.

It appears from the first acts of the Irish Parliament for the encouragement of Fisheries, nearly 40 years since, down to 1819, no improvement had taken place therein.

The Bounties paid in England for the encouragement of Herring and Cod Fisheries, from 1751 to 1782, were £230,352 17s. 7d. and during the same period in Scotland, £488,775 8s. 7½d. which must have left skill and capital to go on without Bounties.

In four years of this space, Ireland, in addition to her imports from Great Britain of this bounty fish, received from the port of Gottenburgh 122,049 barrels herrings. This is made to show there is no analogy whatever between the Fisheries of Great Britain and this Country.

Should the Irish Infancy Fishery Bounties, as they may be denominated, be thus discontinued, without their time for trial, allowed heretofore to all British Fisheries, more advantageous would it have been if the 59th Geo. III. chap. 109, had not been enacted.

The Dutch Greenland Fisheries, about 1650, employed 18,000 men and 300 vessels. The magnitude of their trade was noticed by the British Government, and encouragement held out to embark therein—25 Car. II. c. 7, by allowing the imports from thence free of all duties whatever.

Further encouragement was offered to the British Fisheries embarking therein, including Davis's Straits, similar to the preceding, for seven years.

The first Bounty enacted was 20s. per ton on vessels of 200 tons and upwards.—6 Geo. II. c. 23.

This Bounty, with the exemption of duties not proving sufficiently encouraging, wa further extended from 1740 to 1750. In 1749 the bounty was increased from 20s. to 40s. per ton; and not until then did the British Fisheries assume vigour. This increased Bounty stimulated enterprise so much, that in 1753 the vessels had increased to 49 sail, and in the ensuing year were 67. This Bounty was further extended to 1770. In 1771 the 40s. Bounty was extended to five years, then to be reduced to 30s. for five years, and to 20s. the other five years—all Bounties to cease in 1786. The reduced Bounty of 30s. to 1781 decreased the ships and men employed to such an extent, that it was found expedient to increase the Bounty again to 40s. in place of reducing it to 20s.

The vessels employed in 1775, at 40s. were 105; the following year 98; while in 1781, on the 30s. Bounty, they had decreased to 39.

By the renewal Bounty to 40s. the vessels employed arose in number progressively to 185, in 1786. I trust it will sufficiently appear from the foregoing, that only through the fostering encouragement of *long continued Bounties* from Government could the British Whale Fisheries have ever attained their present superiority over all other competitors.

FIFTH REPORT

Of the Commissioners of the Irish Fisheries, for 1823.

The Commissioners of the Irish Fisheries, pursuant to the statute of the 59th of Geo. III. c. 109, present this report of their proceedings for the year ending the 5th April, 1824.

Before they enter into a detail of the prominent proceedings of the year, the commissioners have much satisfaction in stating, generally, that the Fisheries of Ireland still continue to exhibit a steady annual increase, not more observable in the quantity of fish cured, than in the additional number of men to whom they give employment, subsistence, and profit.

In prefacing their proceedings with this general statement, the commissioners beg leave to add their conviction, that were it not for the impulse given to a numerous and wretched coast population, by the bounties granted under the present fishery enactments, the value of the Irish Fisheries might have yet remained in obscurity, and the energies of many thousands of the coast population have still continued in the same state of inactivity in which the present enactments found them, and from which the bounty system has principally tend to rescue them.

The commissioners conceive there can be no stronger proof of the truth of this assertion, than the progressive increase of the number of men annually engaged in the fisheries of this country. The first satisfactory return of this nature was for the year ending April, 1822, when the number so occupied was 36,192. In the succeeding year this number was increased to 44,892; and in the present year there will be found a still further increase, giving a total of 49,448. If we add to these the number of persons to whom the fisheries, in other respects, give employment, in their respective trades of carpenters, rope-makers, salt manufacturers, coopers, importers of pitch, tar, hemp, &c. we shall find them diffusing employment and subsistence, in a most extensive and beneficial degree. Such facts, then, coupled with the notorious poverty of the fishermen of Ireland, are conclusive in the minds of the commissioners as to the necessity of continuing those bounties, which, for the short time they have been in operation, have done so much towards advancing the fisheries of this country, and rendering them ultimately conducive to objects of obviously national importance.—The question, then, in their opinion, is not as to whether an annual sum of money disposed of in bounties should make a productive pecuniary return, but whether money so bestowed as to relieve poverty, promote industry, increase the general supply of food, and furnish a main source of naval strength, be not a more politic, as well as a more benevolent application of a portion of the public funds, producing moral and political results greatly paramount to any pecuniary consideration.

Of the great capabilities of the Irish Fisheries, the members of this Board have long been convinced; but the principal impediments which formerly paralized those capabilities were first, the extreme poverty of its coast population—and secondly, the want of some legislative encouragement in aid of the feeble efforts of pauperism. To remedy these the statute of the 59th of Geo. III. was accordingly enacted, granting bounties on the cure of certain fish, and vesting in commissioners powers to frame regulations for rendering those bounties effective. The bounties so granted have already excited a spirit of industry fully tantamount to every reasonable expectation; salutary regulations have been framed, orderly conduct has been introduced, where only lawless violence before existed, and the fisheries as (subseqnent parts of this Report will prove,) have experienced a considerable extension, even on those parts of the coasts where the bounties have not as yet come into operation.

Then follows a detail of their proceedings for the year 1823, of which we give an abstract.

The funds, at their disposal, were thus disposed of—

For the completion of certain Piers in the West and South of Ireland, already constructed, in part,	£2040	0
For constructing such new Safety-Harbours on the Eastern and Northern coasts of Ireland, as had been recommended by the Engineer and Officers	7787	10
For building improved Hookers, Smacks, and Yawls, suitable to the South and South-West Fisheries, chiefly on the principal of *loan* repayable by instalments, and applicable to similar uses,	3800	0
For repairing the Boats of the Eastern Province, belonging to poor fishermen, partly by *grant* or gift, and partly by loan, in *materials* not in *money*,	900	0
For encouraging Fishing Companies on a small scale, in the hope of prosecuting the Fisheries on the more remote and poorer parts of the coast, and gradually introducing capital therein,	800	0

Although it would be unreasonable to expect, that every point on the coasts of Ireland could have as yet received substantial and obvious advantages, from the very short period the existing bounties have been in force, yet the commissioners have sincere satisfaction in knowing that advantages not only substantial, but strikingly manifest, have been experienced in many quarters, where, but a short period since, poverty and lawless violence had existed. This applies particularly to the South and West districts.

Previous to the year 1820, the fishing boats of Dungarvan, one of the principal stations in the south of Ireland, had no inducement to catch fish beyond the limited quantity required for the consumption of the town. If the fishing of one day supplied this quantity, the remainder of the week was spent in idleness at home, where there was neither encouragement or facilities for curing, or purchasers for the surplus; now the aspect of things is far different—salt importers and manufacturers are now settled there, and a certain market established for the purchase of any quantity of fish. On these points the Inspector-general observes—" Instead, therefore, of spending the greater part of the week in listless indolence at home, they now proceed to sea, conscious that the supply cannot exceed the demand; desirous of catching as large a quantity as possible, they return from the fishing ground about the middle of the week, throw the fish out on the quay to their wives and children, and frequently go to sea again without a moment's delay; then come the jolters (purchasers) from the inland towns, and when they are amply supplied at a fair price, the curers come next, and take the surplus be it ever so large." He further observes—" That the consequences of this management are, first, a steady demand at all times for the fish taken, when it was formerly notorious that the fishermen were in the habit of destroying a part of what they had caught, when the supply was, as they thought, too abundant; secondly, that every man, woman, and child, in the town, who is disposed to work, may be, at all times employed; 3dly, that the inland poor participate in the advantages of the bounties, by having an abundance of wholesome food, on very cheap terms, and at all times."

In reporting on the district of Kinsale, he observes—" The benefit of the new laws is admitted by the fishermen, and they seem disposed to avail themselves of them to the fullest extent. Three vessels went from thence this season to fish on the Galway coast, and brought back full cargoes."

Such then are the promising appearances exhibited by two of the most important fishing stations in the south of Ireland, where, but 3 or 4 years before, the fisheries had sunk nearly into total decay. Had there been no legislative encouragement to reanimate the almost lifeless fisheries of Ireland, the little portion of existence they exhibited in 1819 and 1820, would, by this time, have probably become altogether extinct.

With respect to the general improvement on the West coasts, where the distresses of 1822 made their principal ravages, the commissioners have every reason to feel satisfied. In the Districts of Westport and Galway in particular, the Fisheries have made the most rapid advances, and promise to continue those improvements, if not checked by unexpected impediments.

When the first returns were made to the board for 1821, those from the Westport district were 886 boats and 3607 men; but no satisfactory return of the fish cured in bulk. In the year 1823, the returns are 1242 boats; 4971 men, and a quantity of herrings cured in bulk nearly equal to 10500 barrels, being an increase of 5000 barrels beyond the preceding season.

It would, indeed, be an ungrateful return towards that most charitable body, the London Tavern Committee, if the Board passed by any opportunity (but particularly one so important) of joining their portion of gratitude to the general feeling of their countrymen, towards that munificent body. By their liberality alone a fund has been established in that district for the repairs of poor fishermen's boats, on the principle of *loan*, annually reproductive, and applicable to the same object. In order, however, to render this fund reproductive, security for the repayment was quite essential. This at first created some impediments, *but the general integrity of the fishermen gradually induced their landlords and others to step forward in their behalf*, and the result is, that from the period the fund came fairly into operation, to the present day, (about twelve or thirteen months) there were nearly 450 boats repaired, at an average cost of £2 12s. each, probably because the aid solicited was not given in any instance in *money*, but in *materials* at prime cost.

In Galway the improvements have been effected even beyond expectation, since the last season. Galway is the only district as yet in the west coast, into which the bounties have found their way, and the results may be estimated by the following comparative statement of its fisheries, since the present enactments came into operation. In the *first* year, 1819, there do not appear to have been any herrings cured in barrel for bounty. In the second season, 1820, Galway made its first, though weak effort, having cured fifteen barrels for the bounty. In the third season, 165½ barrels were cured. In the fourth season, 2195 barrels. (The return for the year 1823 is not given.)

The annual increase of men and boats is equally gratifying, and the Inspector-general observes—" That the number of boats (260) which constitute the increase of the year 1823, have been built within that period, and principally at those places where *piers* have been erected.

The commissioners again bestow a high and well merited eulogium on the London Committee. The benefits likely to be experienced from the application of their funds may be tolerably well appreciated, when it is stated, that in the course of little more than one year, 450 boats have been repaired at an average cost of about £2 18s. 6d. per boat.

Previous to the formation of Sligo, as a distinct district, no fish of any description were cured in that port, or on the adjacent coasts for bounty; but since it became a distinct station (about a period of four months) regular fish curers have established themselves there, and 935 barrels have been cured and branded for bounty.

The report concludes with a comparative statement of the fisheries, as with reference to each successive season from the autumn of 1819 till April, 1824:

	tons	*cwt.*
Total quantity of dried fish produced for bounty in the season of 1819 (being the first season under the present fishery laws)	40	11
Total do. 1820	887	5
Do. do. 1821	1123	19
Do. do. 1822	1417	4
Do. do. 1823	1571	4

HERRINGS.

	barrels.
The total number of barrels produced for bounty in 1819	1193
Do. 1820	7553½
Do. 1821	9726½
Do. 1822	12722¼
Do. 1823	27857

MEN.

Total number engaged in the fisheries in the season of 1821	36192
Do. 1822	44892
Do. 1823	49446

The commissioners further remark that a still more considerable increase has taken place, in the quantity of bulk fish cured along the whole range of the Irish coasts.

ON THE EXTIRPATION OF WEEDS.

(Continued from page 224.)

Wheat, oats, and barley, are sown by a machine, which drills these grains at about 9 or 10 inches betwixt the rows. The annuals spring up in great plenty, are readily eradicated before they become hurtful to the grain, and not allowed to shed their pernicious seeds. We witnessed an experiment a few years ago, upon a rich field in our neighbourhood, which never failed in carrying good crops, except from an overflow of annual weeds. The gentleman, to whom it belonged, sowed one half of this field in drills about 9 or 10 inches, and the other half in broad cast. What was in drills yielded a very full crop, but what was in broad cast was very indifferent, by being over run by annual weeds, which could not be so conveniently got out as in the drilled half. The gentleman, whose testimony is deserving of the highest credit, has since told us, that the deficiency of the broad-cast was to the drilled parts, as nine to fifteen, which is above a third part of the crop, and that the half which was drilled has, ever since that experiment, been in better condition with fewer annual weeds than the other, though always cropped in the same way, and under the like preparations.

When turnips or potatoes are cultivated, the space betwixt the drills is not less than thirty inches, and the crops as abundant as if the rows were closer. Here not only the hand hoe, but the plough can operate with advantage betwixt the drills, so that the necessity of a plain fallow is completely superseded.— Annual weeds thus become less numerous from these operations, and the soil freed in a considerable degree from those seeds, which were wont to spring up in myriads, to the ruin of our crops, even after the best preparations. Such noxious weeds, however, can only be got the better of, by a steady and long perseverance, as they continue a long while fresh below ground, and, as was formerly observed, do not vegetate until they are brought near the surface, and under the influence of the atmosphere. Yet it is obvious that wherever drilling, and other good husbandry, have most prevailed, the diminution of such hurtful plants has kept a corresponding pace with these improvements. Much as we approve of the drill husbandry, we will not pretend to argue that it may not be overdone, as we may consider it might be improper to introduce it over fields of every description, it being chiefly upon light and loamy soils, addicted to annual weeds, that it is prosecuted with the greatest success. Another reason against bringing it into general practice, is the scarcity of hoers. To drill the whole crops, without having them properly hand-hoed, would tend to the increase instead of the destruction of weeds; and it is a notorious fact, that a sufficient number of hands cannot be procured to dress what is at present undertaken, though it does not amount to the twentieth part of the lands under tillage.

To extirpate perennial and root weeds, another method ought to be adopted, and as these prevail more generally in clay soils, nothing is better than a thorough summer fallow. It has been observed, that when the land requires, to be freed from annual or seed weeds, that the mould cannot be made too fine, or the surface too smooth, and that the more perfectly these operations are performed, the greater number of seeds are brought into vegetation. But when it is to be freed from roots, it is much better to turn it up in large pieces, and the surface left in a rough state; for the rougher the surface, the drought is more readily admitted and the roots more effectually destroyed. With every ploughing, the weeds are removed from their place, and the ground being in a dry state, they not readily strike root again. Thus such weeds become weak, and sickly, but, though they appeared dried and shrivelled, knot-grass, dock-weeds, and many other perennial roots, revive upon the return of moisture, after having been looked upon as dead. The most certain method, therefore, is, after the soil is properly reduced, to gather the weeds carefully from the field. The roots of couch grass, &c. make excellent composts, when mixed with new lime shells. This kills the roots very completely and as the result, a valuable manure is thereby procured.

Having at considerable length taken notice of the cure of agricultural evils, we shall now make a few remarks upon the means by which they might often be prevented. Men, when in sickness generally spare no pains to get well; but that being accomplished, their preventive vigilance relaxes, and too often gives way to old habits, folly and dissipation: such conduct is not more ridiculous than that of a farmer, who after having cleaned his fields in good style, and at a great expense, is not sufficiently careful in avoiding a return of the complaint; and it is to be regretted, that thistles, dock weeds, tussilago, &c. are too frequently exhibited carrying their seeds to full maturity, both in corn and grass fields.—Thus, though it is admitted that "prevention is the best cure," the seeds of various weeds are, from a want of caution, unwillingly disseminated in farm grounds, which must at no distant period break out in a manner, that will be both difficult and expensive to remedy, as nothing less than another full course of active measures can be adequate to the cure.

There is no perennial weed more apt to elude the attention of the agriculturist in this way, than tussilago. This deceitful plant brings its seeds so soon to maturity, as frequently to mock the toils of the farmer, even in the year of his fallow. From the seeds coming before the leaf, it was anciently called *filius ante patrem*, and by their ripening so very early, the seeds are not unusually shaken before the ground has got a spring furrow. In this case, should even the whole roots of the old plants be extirpated, they have, by depositing their seeds, made sure of the succession in their own family. The industrious farmer, not aware of this two-fold attack of the enemy, wonders from what quarter he made his approach. If therefore the spring furrow cannot be accomplished in good time, it may not be improper to send hoers, two or three along every ridge; and carefully cut up such plants, so that they may be prevented from flowering, till they can be more effectually destroyed by the plough.—Weeds, springing in this apparently casual manner, have led some very respectable farmers to believe in the equivocal generation of plants. This doctrine is now generally exploded by philosophers; and it is to be wished that it were in equal disrepute amongst agriculturists; for if their principles be unsound, their practice cannot be above suspicion. Indeed if a person believe that weeds grow spontaneously, without seeds and roots, or any other origin than the nature of the soil, we can scarcely suppose he will be at much pains in suppressing them.

There is likewise reason to believe, that much trouble arises from inattention to the choice of grass-seeds. It not uncommonly happens that the seeds of quickens, knot-grass, &c. are mixed with the rye-grass seeds; and from their being nearly of the same shape, size, and colour, pass unobserved into fields which have been well cleaned, and at a great expense; but if there is one such noxious seed to an hundred, it is sufficient to pollute a whole field.

We have dwelt longer upon this part of the subject than we originally intended, because, as far as we recollect, the prevention of such agricultural difficulties, has been little attended to by writers upon the subject; and because we are satisfied, those evils might often be prevented, by a circumspect attention to the purity of the seeds which we sow, and by allowing those of hurtful plants to be as seldom shed in our fields as possible. Nothing indeed can be more delusive than to expect to eradicate weeds completely, by removing their roots, where they have been allowed to drop their seeds previously to their extirpation. In short, we might as well pretend to exterminate the race of moths and butterflies, by destroying them in the last stage of existence; when their brood of caterpillars are already devouring our gooseberry-bushes and cabbages, which caterpillars must in a future stage of their existence, become moths and butterflies.

To conclude, let us no longer content ourselves with eradicating such weeds as are come to maturity; but let us do it sooner, before they have deposited the seeds of a baneful tribe in the soil, and thereby prevent the younger race from making a party against us. Mr. Malthus has demonstrated, that early marriages ought to be discouraged, where the parties appear unable to bring up a family; and that it is better to prevent an over population than to starve or destroy them after they come into the world. The rule may be applied to husbandry for the suppression of weeds, as it may often be easier to prevent their growing at all, than having to extirpate them after they have injured us very materially; and to use the words of that celebrated writer, let us be as attentive to the "preventive as to the positive check," and we flatter ourselves that such efforts will be crowned with success, and that we soon shall see the happy effects of well timed and judicious exertions.

*** In our next will be a valuable article on the *Dairy*, and one on *Salt as a Manure*.

CURRENT PRICES IN DERRY.

Oatmeal,	...	15	0	*to*	16	0	*per cwt of* 120*lb.*
Oats,	...	0	10	–	1	0	*per stone.*
Barley,	...	1	0	–	1	4	
Potatoes,	...	0	4	–	0	5	
Beef,	...	0	5	–	0	7	*per pound.*
Mutton,	...	0	4	–	0	7	
Veal,	...	0	6	–	0	10	
Pork,	...	34	0	–	37	6	*per cwt. of* 120 *lbs.*
Butter,	...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax,		45	0	–	56	0	*per cwt. undressed.*
Five hank yarn		2	8	–	3	2	*per spangle.*
Four, do. do.		2	6	–	2	9	
Three, do. do.		2	5	–	2	10	
One, do. do.		2	0	–	2	6	
Coarse Bagging,		2	6	–	3	0	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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THE DAIRY.

On the curing and marketing of Butter.

In the Scotch Farmer's Magazine for May last, an article has appeared on this subject, from which are the following extracts.—If we did not know how hard it is to move the farmers in some parts of our country one jot from the old track, we might feel astonished that the Scotch people persevere to take so much pains in spoiling their butter. We are, comparatively speaking, arrived to a degree of excellence in this respect, and it is pleasant to think that the Irish can shew an example to the Scotch, although but in one department of rural economy. The following is an account of the present system of curing butter in Scotland, and that too in the counties of Aberdeen and Bamff, where the greatest quantity in Scotland is made, the export from the former district being estimated at not less than £50,000 per annum. It is almost inconceivable how there can be such a consumption for an article so abominably prepared, at least if [illegible] used for food.—"Butter cured in these counties," we are informed, "is not cured by the farmers, but the curing is a trade by itself. The curer buys the butter fresh from all his neighbourhood, and even employs hawkers who travel from house to house selling groceries, &c. taking butter in exchange; the hawker having collected a quantity brings it to the curer, the produce perhaps of fifty dairies, made up in lumps, and thrown into dirty casks, carried from place to place during his collection, and in these open casks, generally sugar tierces, exposed to sun and wind, covered with a coarse open sheet. I have met them on a road where the dust was flying thick, with no other covering, the butter melting in the sun, and the covering insufficient to keep out the small dust. This butter is, perhaps, a week old ere it reaches the curer, where it is taken out and thrown down in the corner of a barn, or such place till cured. In the act of curing, it is thrown into large wooden troughs with salt, not always weighed in proportion to the butter, but guessed by a skilful hand, and trod on by men and women with their bare feet. I know only one curer in this district who cures with the hand, and his butter is among the best I know." The writer then proceeds to describe the improper kind of casks which are used, generally of soft wood for cheapness *so open as to admit dust, and to allow the pickle to leak out.* To remedy these evils is no easy matter; it is difficult to drive people off from their accustomed method, perhaps, says our informant, the best way will be to lay no restraints, but to give such a preference to fine butter, as will in time shew them their own interest—he proposes, however, that inspectors should be employed who might brand and character the butter for exportation, as in Ireland.

We are informed, active measures have been taken by the Agricultural Association of Aberdeen, to promote the work of improvement. The sum of 108 guineas has been voted by that Society to be awarded in premiums, and printed suggestions circulated as to the curing and packing of butter. Let not then, the N. W. farmers be contented with the superiority which some of them already possess. Let them bestir themselves if they are not blind to their own interest. Let them look to the Dutch, to the people of Cork, of Carlow, of Belfast, and let them never rest contented until they arrive at the utmost attainable perfection. With a view to remind some, and, perhaps, to instruct others, the following directions are submitted to the public:—

1. The milk-house or dairy should have no internal communication with any other building. It should be thatched with straw and turf, the better to exclude the heat and cold. It must have two windows for light and ventillation, one on the N. and another on the N. E. that the sun may seldon or never shine thro' them. It must be kept free from smoke, large, well-aired, and clean; and no potatoes, fish, onions, cheese, or any thing likely to impart a strong or bad smell, should be kept therein. In short, nothing but the dairy utensils,

which must also be kept sweet and clean.—No pool of filthy water, putrid matter, or heaps of weeds, should be suffered near it.—The windows should be netted with wire so closely, that neither rats nor mice can enter, and covered with gauze, to exclude flies, and at the same time admit air and light. The ceiling, about ten feet high, ought to be plastered; the floor laid with well joined hewn stone, washed at least twice or thrice every week; and no sour milk, foul water, nor any filthy substance whatever, must be kept within the house, or suffered to remain on the floor. Its temperature ought at all times to be kept, as near as possible, at from 50 to 55 degrees of Fahrenheit's scale.

2. The milk, when brought in from the cows, should be most carefully strained thro' a fine hair strainer, so that it may be quite free from the dust and hairs that fall in the milking. This is generally too negligently done; and the consequence is, that the butter, however well made, must be marked by the Inspector, second quality. It is a good precaution also to pass the cream on putting it into the churn, through a thin piece of stuff.

3. The strained milk must, when cool, be put into sweet well-seasoned milk pans. A tin skimmer with holes in it, is the best for taking off the cream, which should always be churned while the cream is fresh.

4. The churns, whether pump or barrel, should be made of the best well-seasoned white oak; and as cleanliness is of the first importance, great attention should be paid to the washing, drying, and airing of the churns, immediately after use, otherwise they are sure to contract a sour unwholesome smell, which must injure the quality of the butter.

5. The butter, *immediately after being churned*, should be thrown into fresh *spring water*, where it should remain for one hour, at least, that it may grow firm. But do not allow it to remain too long, or the surface is bleached white; which, when made up, produces the mixture of colour provincially termed *pinrow.** The best practice is to use a flat piece of wood in place of the hand, in working out the milk. A warm hand, especially in summer, is very injurious. At the end of the third or fourth washing, some fine salt should be put into the water, which will raise the colour of the butter, and purge away milk that may remain among it. Before salting, it is very essential that no milk or water be left, otherwise a strong smell, and unpleasant taste, will be the certain consequence.

The butter thus prepared should immediately be salted.

6. Use the proportion of only half an ounce of salt, and one-eighth of an ounce of saltpetre or refined sugar to each pound of butter, which will give it the sweetness of the Dutch, so highly prized in the London market. The great fault of Irish butter is excessive saltness: certainly not more than one ounce of salt should be used to the pound of butter—*even less* is quite sufficient.

Although butter may be well made and well flavoured, yet if it has too great a proportion of salt, the Inspector will mark it second or third quality.

7. The precise proportion of salt used for one making, should be used also for the others; for when the Inspector finds one layer more salted than the rest, he marks the cask with a lower character.

8. The Liverpool stoved salt, or Portugal St. Ube's or bay salt, is from strength always to be preferred. All salt must be kept quite dry, and at a distance from the fire, to prevent its imbibing the smell of the smoke. If kept in a cask, a little unslaked lime placed under it will prevent it from drawing moisture from the ground.

9. The mixing of the salt with the butter should be done in wooden dishes, after the water and the milk are completely expelled, and no time should then be lost in packing it into the firkin, firmly with the hands, or a round wooden stick, pressing it tightly to the sides, so as to prevent air becoming lodged; it should then be covered with a clean linen towel damped with pickle, to exclude the air, until the next making be added. It is a very wrong practice to keep a making of butter uncured 'till the next churning, for the purpose of mixing the two together. This mode invariably injures the flavour of the whole, and renders it of too soft a quality ever afterwards to get firm.

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* This effect, as a friend informs us, is caused by using scalding water.

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The firkin should be filled up to the crose, and then covered over with a little of the purest salt; sufficient room only must be left for the head of the cask.

10. The milk of new-calved cows should never be set for butter until at least four days after calving, as a small quantity of such milk will injure a whole firkin. The practice of scalding cream in cold weather should also be avoided, as cream thus treated will never make good butter.

11. The firkin should not be steeped or scalded, but merely well rubbed with a cloth, using a little salt.

12. Butter should always be sent to market while new. When held over (as is often the case) it must degenerate in quality; and allowing that an advance should take place in the market, the rise is seldom equivalent to the decline of character.

The farmers in this neighbourhood are in some cases deserving of being censured for a practice which a tourist in England thus exposes—" Of all the fallow fields which came under our observation, one a short distance from *Brigg* was under the most wretched management. It was an extensive common field, of good soil, but very foul, and had received a single ploughing, which was given by cleaving down the high broad ridges.—To our utter surprise (a Scotchman speaks) though in the first week of July, the possessors were covering the quick weeds and thistles with dung, they had not so much as given it a harrowing, but were driving out the manure in all directions. We held up our hands in amazement at such barbarous conduct; and one of my friends was for clearing the country of such Goths, and transporting them at once to Botany Bay."

What would our traveller have said had he witnessed a similar instance of gross mismanagement which occurred this very season, within five minutes walk of Derry, and that too with the aggravating circumstance that the field in question was not held as a common, but as a distinct possession.

Where land is foul, every operation of husbandry must be proportionably non-effective, and even the manures applied will in a great measure be lost. We have seen this season numerous fields in which the *prasshugh* predominates over the corn; some few of the more improving farmers have got the better of this enemy, but the greater number seem unwilling to disturb such a formidable invader, or rather seem to treat it as the *ancient and natural possessor* of the soil. They will, therefore, as they heretofore did, decline the trouble and expense of extirpation, although it is evident, that a growth of weeds so very thick, not only encroaches on the room, but devours the subsistence of the crop which is the object of the husbandman's care. In some cases a Summer fallow is quite indispensable, for it will often happen that the time for sowing the seed is arrived, before a sufficient number of ploughings could be given to remove either root-weeds or annuals. Hence, the Summer fallow is resorted to, by which the full advantages of ploughing are attainable in perfection.

The necessity of Summer fallow depends greatly upon the nature and quality of the soil, as upon some soils, a repetition of this practice is seldomer required than upon others. Wherever the soil is incumbent upon clay or till, it is more disposed to get foul, than when incumbent upon a dry gravelly bottom, besides wet soils, from being ploughed in winter, contract a stiffness, which lessens the pasture of artificial plants, and prevents them from receiving sufficient nourishment. When land of a dry gravelly quality gets foul it may be easily cleaned, without a plain Summer fallow, as crops such as turnips, &c. may be substituted in its place, which when drilled at proper intervals, admit of being ploughed as often as necessary; whereas wet soils, which are naturally unfit for carrying such crops, must be cleaned and brought into good order, by frequent ploughings and harrowings during the summer months.

Nothing that is said in defence of fallow is meant in vindication of the absurd system of taking only two crops to one fallow, as practised upon many English common fields.—How often it should be used, must in a great measure be left to the discretion of the farmer, who will repeat it when necessary, if he knows his own interest. For the sake of a little miserable feeding to a flock of half-starved sheep, what is called fallow is often most shamefully performed, or rather almost completely neglected. It is not only not cleaned from weeds, but a quantity of trefoil is sown with the foregoing crop, to mend the feed for the sheep; and for the sake of the despicable value of that scanty crop of trefoil, assisted, no doubt, by the couch and other grasses in countless variety and quantity, the fallow is left unploughed as long as possible; so long, indeed, that when at last it comes to be ploughed, there is no longer time to clean the land at all, far less to clean it effectually; and consequently, every succeeding crop has to labour hard for its subsistence, among a matted bed of weeds of every denomination; and you have to thank the excellence of your soil and climate, that the crops are ultimately worth the trouble of cultivation and harvesting. It would certainly be infinitely better, in every respect, to have a sufficiency of sown grass, which springs up a vast deal earlier than old meadow, and is greatly more abundant in its produce, in another field, to serve as early feeding for your sheep. In some of the best managed districts in the south, other early crops are grown for this purpose, such as rye, winter tares, and rape.

SALT AS A MANURE.

(Chester Chronicle.)

The distinct and unequivocal manner in which the Chancellor of the Exchequer has stated the intention of government, relative to the salt tax, will give rise, it is presumed, to very extensive trials of the article as a manure.

It may be of some service to your agricultural readers, to throw out a few hints connected with the indiscriminate use of salt, for the purpose I have just mentioned. The advantages of salt as a manure, have, in my opinion, been much over-rated, and one very essential circumstance has been overlooked by experimental enquirers. Some have found salt serviceable to land; others, on trial, have found their expectations disappointed, and they have concluded it to be utterly unworthy of the farmers' attention. There must be a cause for these contradictory results, which may properly be reconciled by the following explanation. Common salt and refuse salt, in agricultural experiments, have been confounded. Of *refuse salt* it may be said, that when judiciously applied to land (I mean as to quantity) vegetation is promoted, and it quickly becomes healthy and luxuriant; but on the contrary I affirm, that the application of rock or manufactured salt, retards vegetation, enfeebles the growth of plants, and facilitates their destruction.

These baneful effects on vegetation may be said, to be the natural result of a too liberal use of salt as a manure; but I further affirm, that there is no limit at which *salt* can be beneficially used as a manure—it either destroys vegetation, or it does nothing.

Let us proceed to point out the distinguishing characteristics of both those substances, and though it may be difficult to persuade every person, that salt does not promote the fertility of land, it nevertheless may be of some importance to make him acquainted with the composition of the materials he is using. It is well understood that nature presents salt to us in a state of impurity—the manufacturer, in his process, separates the *refuse salt*. The sulphate and carbonate of lime are precipitated to the bottom of the pan, and when the brine has been sufficiently boiled, the muriate of soda or common salt begins to deposite, and is raked out of the liquor. A quantity of fluid matter still remains, after all the salt has been obtained, which liquor yields substances widely different from common salt. This, mixed with the pan-cratch, forms the mixture called *refuse salt*, and consists of sulphate of lime, carbonate of lime, muriate of lime, muriate of magnesia, and in this mixture we have the elements which are necessary to constitute a good manure.

OSIRIS.

The above writer's ideas are so much at variance with the opinions of many agriculturists, that they are by no means to be implicitly received. Even granting that salt does not convey nourishment to vegetable life *directly*, it may meliorate the soil by hastening the decomposition of the substances mingled with it, and by destroying vermin of all kinds, not to mention the stimulating quality ascribed to it, by which it may sharpen, as it were, the digestive organs of plants, something in the same way as it does those of animals.

Paring and Burning—As we have before observed, is an excellent practice for breaking up old swards, and coarse, rough, rushy and heathy lands, or even very old swards on rich fertile soils. The farmer need not fear that his soil will be ruined by it if he pursues the following course—1st, turnips—2d, oats—3d, fallow, well limed for turnips—4th, barley sown with clover and grass-seeds, and depastured with sheep for three or four years. It is the *injudicious cropping*, more than the ill effects of paring and burning, that has been the chief cause of bringing such an odium upon this practice, which is certainly an excellent one in *some situations, and properly conducted*; but, like the fermented juice of the grape, may be too often repeated and improperly applied. The popular clamour against this practice, "that it destroys the soil" we can by no means admit, and are inclined to believe that not a single atom of soil is abstracted, though the bulk of the turf be diminished. This arises from the burning of the roots or vegetable substances, which by this process afford a considerable portion of alkaline salts and other principles friendly to vegetation; as we find those ashes produce abundant crops of turnips, which fatten stock much quicker than those after any other dressing or manure which can be applied; and the succeeding crops are so very luxuriant, as to tempt the *injudicious cultivator* to pursue it too far; who, for the sake of a temporary gain, may be said to rip it up, as the boy did with his goose that laid golden eggs.

REPORTS FOR MAY.

By the agricultural reports for several counties in Scotland it appears, that there are apprehensions of a deficiency in the hay crop. Pastures also are late and stinted, in consequence of which lean cattle are little in demand. Oats are in many places a poor crop and have also suffered by the grub and wire-worm. The working of fallows is well forward. Wheats in general look well. Barley has been kept back by the cold winds and drought. The Swedish turnips* have been sown in good time and good order, and the preparation of the ground for the late varieties more than usually advanced. In some countries the sowing of turnips commenced before the end of March, the barley sowing having been finished early in that month. A great breadth of potatoes is said to be planted in England, and they begin there to be sensible of the value of this crop in cleaning land. Reports from both Scotland and England agree, that the drought which has been injurious to meadows and pasture, has been peculiarly favourable to turnip husbandry.

An article has appeared in the last number of Blackwood's Magazine, on the instruction of the Irish peasantry, in which the writer questions the efficacy of school education, at least as it is carried on in general, and wishes to do away the prodigious delusion which he conceives to exist on this subject. He seems to speak from personal observation, when he describes the routine of education which is observed in country schools, and, indeed, as the business is often conducted, the effect on the morals of the community must be but insignificant. It is well known to those who have but a slight acquaintance with the subject, that the benefit attainable at any school must be greater or less, according to the previous habits and dispositions of the pupil at home. The child of a good, attentive, prudent mother, and the child of a foolish, careless, and wicked one will be as opposite as gentleness and surliness, docility and obstinacy, a right and a wrong frame of mind can make them. A teacher of common sense will have a pleasant and easy task with the former. A teacher of the best dispositions, and of first rate talents, will often have little else than disappointment and vexation with the latter. Of so much importance are first impressions, so intimately interwoven with the child's existence are the taste and temper of the mother, that the mental resemblance is scarcely less striking than that of the external form. The writer in Blackwood, therefore, has justly observed that it would be a vain expectation, if we were to suppose that the mere efforts of schoolmasters are likely to produce a great and general reform, in the principles and behaviour of the common people. "Country schools," he asserts, " when they are not made the auxiliaries of parents and the clergy, are not of the smallest use in teaching morality and religion. The children leave the school at twelve or thirteen, with characters wholly unformed—with no school-taught knowledge beyond a very limited one of the arts of reading, writing, and arithmetic, without possessing the means of obtaining books, and without being able to understand books if they chance to meet with any. Their characters are almost altogether formed after they leave school, by those among whom they grow up to maturity."

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* One material advantage attending the practice of depositing manure such as rape-dust, culms, or bone-dust, along with the turnip seed in drills, is the being enabled to postpone the time of sowing ten days or a fortnight, from the much more rapid progress of the young plants, than with yard manure, thereby giving the chance of a better fallow.

The writer questions an opinion that has prevailed, which ascribes the excellent character of the Scotch peasantry, to the efficacy of schools in teaching morality and good conduct. He says—" the History of Scotland will shew what first made the peasantry religious, even religious zealots; and it will shew that village schools had no hand in this whatever. The character and conduct of the Scottish clergy will shew what has kept, and still keeps the peasantry duly acquainted with moral and religious duties. The boy in Scotland has parents who are moral, and to a certain degree religious—he leaves them to go under the controul of a master who is so —he grows to maturity in society that is so —he is under the ministry of a zealous, able clergyman, and, therefore, he can scarcely be other than a moral, and in a greater or smaller degree, a religious man. But give him the parents, the masters, the lack of controul, and the society of Ireland; and then what will he be in spite of all that the schools can accomplish? The religious tone was given to the minds of the people of Scotland before education was diffused among them—it never would have been produced by schools, neither would they *unaided* have kept it in existence.

The writer, therefore, proposes to make religion a leading topic, not the reading without explanation, a few chapters of the bible. A child, he asserts, cannot, without assistance, understand the scriptures as a system of religion, or to be led to take them as his guide through life. Besides, that to the great mass of the people (which is catholic) the reading of the scriptures is only partially permitted. The schools being inadequate to effect the desired reformation of manners and of morals, the parents being incapable of the task, or disinclined to it from vice or contented indolence, and general society being adverse to the moral purity of the rising generation—in what way is this woful deficiency to be made up?

The question comes to this, what *additional* means besides the schools must be employed to inculcate religion, (the very thing prohibited in those schools) and how are they to be taught the arts, habits, tastes, prejudices, feelings, opinions, and rules of civilized and social life? The building of churches, the circulation of catechisms, and the spread of protestantism through the agency of able and eloquent pastors, are the means relied on by this writer to introduce a new æra in Ireland. Does he think it so easy to raise up in the establishment, such a band of devout missionaries with zeal and eloquence sufficient to fill his new churches with proselytes? His apostles may call the stubborn catholic from his vasty deep, but will he come when they do call him. His assertion is, that schools are worthless or pernicious unless religious instruction forms the basis of the system.—And whereas the schoolmasters can produce no good impressions on the young generation, why the full grown sinners are to be addressed, and having been gained over by persuasive eloquence, they will become the instructors of their countrymen. That the schools in many instances, perhaps with but few exceptions are far from good, may be true, but it does not follow that they are therefore positively bad. Gentleness and decency, and the tastes and habits of civilized life must be of slow growth, in a wretched district where the poor drudge the schoolmaster shares the hard earned meals of his ragged employers. But the very existence of a school is no bad omen, and the poor training, even of a miserable school, is far preferable to vagrancy and ferocity. It may not be possible for the zealous protestant to plant his faith in such a seminary, to make a convert either of the teacher or of the pupil, the very suspicion of such an attempt might even put an end to all friendly feeling or intercourse between them. If so, the residence of a protestant clergyman, and the erection of a church in every village in Ireland, could not produce the mighty consequences which our author seems to anticipate. As good neighbours, kind patrons, beneficent employers, and hospitable gentlemen, the clergy so stationed might render most important services—but in their clerical character merely, as preachers or catechists, they would do little good, they might do great injury, and retard the very cause of which they were the advocates.

Even the acquisition of reading which no doubt is to many attended with no benefit, may to others be the source of incalculable advantages. It is not correct to represent all the teachers as incompetent, and all the parents as depraved. There are no doubt many masters possessed of virtue and of knowledge, sufficient to render them valuable auxiliaries in the cause of social order and of morality. Our author admits as much even of the priests, to whom he advises the established clergy to render every support and encouragement. And why not encourage the sober, the moral, and respectable schoolmaster of whatever creed he may be? If it is right to strengthen the hands of a good priest, who conscientiously discharges his duty to his flock, although attached to a worship different from the Protestant, it would be only consistent to render similar aid to the teacher of a school, who inculcates nothing contrary to the peace of society, or to purity of manners. Under the various forms which religion assumes in the christian world, the blessed influence of its lessons, breaks out with more or less lustre, but in what is by many considered its greatest obscuration, it still retains much power to cherish good principles, and to stimulate to good conduct. In place therefore of relying on proselytism, and the enforcement of a religious observance of the Sabbath as the remedies of our moral disorders, we cannot help thinking that the diffusion of education is far more likely to produce the desired effect, more likely to excite a friendly feeling between the patrons of education and the poor who are the objects of their care, perhaps to wear away the animosity which rankles in the hearts of too many both of the reformed, and of the Catholic professors.

There is, no doubt, great room for improvement in the schools, and in the character of the masters. And since so little good can be instilled by ignorant, necessitous, and often wicked parents; and since the visits of the landlord, or of any who have the power and the will to serve them, are like those of angels, few and far between, there is the more occasion that the education which they get may be as useful as possible. The employment of mistresses, for very young children, as is praçtised in England, is a measure of primary importance, for, the bent which may be given even in the first years of life, by a tender and considerate conduct, is found to have the most friendly influences on the whole character during life. If, as our writer says, the learning acquired at school is too trifling, and the time spent at school too short to have any valuable and permanent effect, let it be our concern to provide them with a richer fund of knowledge, and to extend the period of education. If the poorer classes cannot obtain for themselves moral and competent teachers, assist them to do so. Make such provision for teachers as will raise the respectability of the profession. And as there is very little chance that apostles of Protestantism, such as John Knox or Wickliffe will start up, or that if they did, they will rouse the hatred of the Catholics against their present pastors, or their ancient faith, by turning the tide of their enthusiasm in favour of the reformation; let us try to make them peaceful citizens and useful men, by putting within their reach a moral education, and giving them exemplary teachers.

INFANT SCHOOLS.

Some years ago, Mr. Brougham, speaking in support of a bill on the subject of education, took occasion to dilate on the importance of *dame-schools*, which are intended for the care of very young children, and of which he demonstrated the numerous advantages.—An article in the Morning Chronicle informs us that a meeting was lately held in London, for the purpose of extending the number and influence of these schools. The ladies composed by far the major part of the assembly, which was very large, and a great portion of them were of the society of friends. The Marquess of Landsdown was in the chair—and, as the sentiments expressed by that enlightened nobleman correspond with those which we have been endeavouring to advocate, a part of our paper may be usefully employed in laying them before the public. The opinions of other gentlemen, also, who addressed the meeting, and who will be admitted to possess equal ability and benevolence, will be found well worthy of attention.

The Marquess of Landsdown, in opening the meeting, said, that he could not do better than to state the object and circumstances which had given rise to these schools. A few years ago, it had been suggested to establish in Westminster, an infant school; and this had been followed by similar establishments in various parts of the country; *they had all of them been successful in so eminent a degree*, that the attention of the public might be fairly invited to them. When the plan had been first suggested, he had been induced to attend to it, though he took small credit to himself for so doing, because it was only at the instigation of others, and because, though he had felt that it was an experiment fit to be made, yet he had not felt very sanguine as to its results, though, at the same time, he was aware that it opened a wider field of possible benefit to the lower classes of society, and that the friends of it were consequently fully justified in their support of it. The schools, however, had so completely succeeded, not only in the negative plan, that it had in view of keeping the children out of vice and mischief, but even to the extent of engrafting on their minds at that early age those principles of virtue, which capacitated them for receiving a further stage of instruction at a more advanced school, and finally, as they approached manhood, to be ripened into the noblest sentiments of probity and integrity. It had been urged at that period, and as he then thought, with great propriety, that with regard to young children the most beneficial education they could receive, was a domestic one, under the superintendence of kind and prudent parents; but upon maturely weighing this objection, it appeared to him that the option pending on the benefits of this institution was between some sort of education and no education at all; for it was obvious to every body, that in this city it was impossible for poor parents to give that attention to their children in their early years, which was the very period when they most especially required attention, and therefore far from doing harm by withdrawing these children from their parents, they were rather withdrawn from the streets of this crowded metropolis, where they were exposed to every vice, and which, by gradually maturing as they grew up, would finally lead them to the most injurious and atrocious crimes. It was to meet this species of depravity that this institution had been established, and its utility could not be doubted, by such as were aware of the vices into which children scarcely six years old had been led by their more practised enticers, when children of that early age were found engaged in conspiracies, in which as they were apparently the most innocent, they were the most useful. —This Society, acting upon the important truth, that where the seeds of vice might be sown, there might be introduced the seeds of good; that where evil had taken root, there might be planted virtue; *had the satisfaction already of seeing hundreds giving, as it were, security for their future good conduct, by the happiness and content which they at present exhibited, and giving to the world a fair picture of a well-governed and promising Society.* This was the picture he wished to present to the meeting, and which would be presented by the other gentlemen that would address them, who would explain the mode in which was conducted this most successful plan for the amelioration of the juvenile poor.—*(To be continued.)*

CURRENT PRICES IN DERRY.

Oatmeal,	...	15	0	*to*	16	0	*per cwt of* 120℔.
Oats,	...	0	11	–	1	0	*per. stone.*
Barley,	...	1	0	–	1	4	
Potatoes,	...	0	4	–	0	5	
Beef,	...	0	5	–	0	7	*per pound.*
Mutton,	...	0	4	–	0	7	
Veal,	...	0	6	–	0	10	
Pork,	...	34	0	–	37	6	*per cwt. of* 120 *lbs.*
Butter,	...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax,		45	0	–	56	0	*per cwt. undressed.*
Five hank yarn		2	8	–	3	2	*per spangle.*
Four, do. do.		2	6	–	2	9	
Three, do. do.		2	5	–	2	10	
One, do. do.		2	0	–	2	6	
Coarse Bagging,		2	6	–	3	0	

⁂ D.'s excellent letter in our next.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

N. W. SOCIETY'S MAGAZINE.

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To the Members of the North West Society.

The first step to improvement is to acquire a knowledge of the actual circumstances of the thing to be improved. Therefore, I confess, I felt dissatisfied that the enquiry into Irish affairs, ordered by Parliament in this session, was so limited in its range. I should have wished that the state of your country had been diligently examined; because it would have been highly honorable to every order of your population, and because the result would have been ultimately useful. You must all have observed that what is said in Parliament, and at public meetings in England, betrays the most extraordinary ignorance of Irish affairs that can be imagined; and particularly it must have struck you that there is very seldom any reference to your province, except for a purpose which I shall not on the present occasion notice. If we are to believe the newspaper accounts, the Parliament of this session has found it necessary to amend, that is, to change, more than one law of the last, and if the outlines of an act, which I have seen published in many papers, be correct, it is wonderful that such ignorance could be found in any society within the British empire as to imagine such a thing. For the relief of persons holding small tenements, it is said to be provided, that when the crop growing on the premises appears to the tenant not to be worth the rent reserved, he may have relief by surrendering his holding. On this extraordinary piece of legislation I will make no remark, except that it is absolutely necessary that pains shall be taken to convey information to the society whence it issued. Years have been spent in what is called amending the Grand Jury laws, which were as perfect as laws could be, and which required attention only on the part of those who paid the taxes, or in other words, public spirit, to become the most efficient means of improving a country which have been yet devised. The effect has been, in Ulster, to encrease the tax, and drive the most respectable of the overseers to retire from their thankless, troublesome office, without a single good result. Indeed when one considers that the preamble of the grand Road Act of the present day states the necessity of getting rid of oaths, and that its first clause doubles their number, one may form a notion of this law. Then last year the salaries of certain county officers were *fixed*—that is, Grand Juries were said to be such jobbers that they squandered the public money for their friends—it was necessary to set bounds to this—and it was done by adding much to the expense. Now, in this session, it is found necessary to leave a discretion to Grand Jurors.

In gaol matters the quantity of food which an unfortunate prisoner is to have per diem, is regulated by travelling gentlemen, who are paid about two thousand a year, and this is to be saved by stinting the potato pot, or buttermilk can of a wretch confined perhaps for a slight offence, or none. And when our countryman, Mr. North, declared in Parliament, that his hopes of improvement in Ireland rested on the exertions of its country gentlemen—he, as we read it in the newspapers, was laughed at. The gentlemen of Ireland have been accustomed to approach the House of Commons in *formâ pauperis;* and we know from good authority that poverty makes men ridiculous—hence the laugh. But had we a good account of the changes made by Parliament in our country for some time past, it would, I fancy, make men ready to laugh at the idea of any improvement arising from that quarter, till a little more information shall have reached it. For all these reasons it is necessary that you should hasten to make public a statistical account of your district, and when the wondrous drains of wealth which fall into the reservoir of absentees, and into the avernal gulph of the excise, shall be considered, and that not one shilling makes its way again to replenish the exhausted sources whence it flows, it will be considered curious that we are what Providence has been pleased to suffer us to be. It will not fail to strike the most inattentive observer as likely, that had we also been supported and encouraged as we ought—had our fair and honest portion of the public purse been sent among us, to enable our deserving population to avail themselves of their natural advantages, we should not at this day have cause to envy the most envied portion of Great Britain. You have got a large collection of valuable materials—lay them before the public, and vindicate the character of your countrymen—present them to the British reader in a new light, as men deserving respect—produce the records of your prisons and your courts of law, your places of worship, and the state of education among you. Assert your right to consideration abroad, and lead your people at home to know that they deserve it. And now that the subject of education presents itself, allow me to attract your serious attention for a few minutes. It is not, I believe, denied, that education is necessary for Irishmen. There seems to be some difference of opinion as to the sort of education, and as to the place where it should be sought. From a paper now before me, I shall quote very shortly what is reported to have been said in the House of Commons on the 10th instant. Lord A. Hill presented a petition from the Belfast Academical institution—"praying the House to use its good "offices with his Majesty, and implore him "to direct an enquiry into the state of their "funds and resources." Mr. Gouldburn said that—"that the Government were by "no means indifferent to the objects of the "institution, but considering the other and "more important institutions in Ireland which "called for their support, they were not pre- "pared to accede to that which was the ulti- "mate object of the petition—pecuniary as- "sistance." Mr. Ford said—"the institu- "tion was properly conducted." Then the petition was ordered to lie on the table, and and on its being moved that it should be printed, Mr. S. Rice proposed as an amendment—"that an humble address be presented "to his Majesty, praying that he would be "pleased to instruct the commissioners ap- "pointed to enquire into the state of educa- "tion in Ireland, to take into their earliest "consideration the Belfast Academical Insti- "tution." This amendment was supported by Sir J. Newport and Mr. Hutchinson, and opposed by Mr. Gouldburn and Mr. Peel, who, among other things, is reported to have said that it was considered better that young men of the North of Ireland should receive their education in the Scotch universities, than in a *large manufacturing town like Belfast.* However that an enquiry should take place into the state of the college, after the commissioners had performed their more pressing labours. The first thing which deserves your notice here is, that except Lord A. Hill and Mr. Ford, who are members of Parliament for Down, no Ulster member advocated the cause of this institution, which was supported by Mr. S. Rice, Sir J. Newport, and Mr. Hutchinson, representatives of southern towns in Ireland, and Mr. Abercrombie and Mr. Hume, Scotch gentlemen, and all advocates for economy. The second, that Mr. Gouldburn thinks there are more important institutions in Ireland, and that Mr. Peel thinks your youth would be better educated in Scotland than in Belfast, (as to the reason added—that Belfast is a large manufacturing town; I am sure Mr. Peel did not say the words—he must know that there are manufactures in Scotland also.) Now, where are these more important institutions to which Mr. Gouldburn alluded? or where can youth be better educated than at home? If Mr. Peel would be understood to mean, that there is more religion or morality in Scotland than in Ulster, he proves how necessary it is, that he should be speedily undeceived. He should be taught that all Ulster would not furnish ten (perhaps I might say one) subscribers to a free thinking petition to Parliament, such as has twice proceeded from Edinburgh; and that there is more vice and ignorance in Glasgow than in the three counties which compose the North West District. The third thing which I would direct your attention to is this—that if you mean to establish seminaries for the instruction of your youth in useful arts, you must depend on your own resources: I consider them sufficient for the purpose. But should they not prove so upon trial, you can have the subject referred to the committee on Irish education. Your quarterly meeting approaches. Let not time pass away.

S.

FAIRS.—July 1st, Castlederg, Tyrone—Drum, Monaghan—Dunkanally, Donegal—Loughgall, Armagh—Mounthill, Antrim—2d, Aughnacloy, Tyrone—Castleblaney, Monaghan—Maguire's bridge, Fermanagh—3d, Dungannon. Omagh, Tyrone—Fintown, Donegal—Shanescastle, Antrim—4th, Cross, Derry—Donaghadee, Down—Mahoolan, Derry—Moy, Tyrone.

To the Editor of the N. W. Magazine.

Mr. Editor,

It has been said of Ovid that "he knew his faults, but he loved them."—I fear the same is true of mankind in general—it is not so much an ignorance of what is right, as an attachment to what is wrong, with which we are chargeable; and though instruction is usually intended to produce conviction, perhaps it is often administered in the shape of reproof also. In this light, I receive the suggestions of your valuable correspondent S. in your paper of the 9th instant; and feeling how justly his censure of silence falls upon myself, am determined, henceforth, occasionally, to indulge the cacoethes scribendi; and whenever any thing strikes my mind which may be suited to your pages, shall humbly offer it for your acceptance—perfectly satisfied at its being inserted or not, as suits your convenience, or the interest of your publication.

I have been long an attentive reader of the N. W. Magazine, and I may add, a deeply interested observer of the effects produced, producing, and likely to be produced by the N. W. Society, on the District which their philanthropic views embrace; being naturally, I confess, of an ardent temper, I had formed, from its institution, very sanguine hopes on this score; but I find them outstripped by results. I find scepticks persuaded of its utility—indolence roused from its lethargy—prejudice yielding from conviction—and industry animated to further efforts.—The tide is with you—the machine is in motion, and it requires but perseverance to accomplish an undertaking, which will not only confer lasting and valuable advantages upon your country, but which will also transmit to posterity the names of the founders and directors of this institution, embalmed in that praise which all *may* and *should* emulate, but which none can envy.

It is the necessary result of improvement in either arts or sciences, that the more is known the more appears still to be learned: and in order to keep any society or institution from falling into lethargy or decay, it must be in a state of progression. Instead, therefore, of resting satisfied with the happy and prosperous results already arising from the labours of the N. W. Society, I feel the utmost satisfaction, that some of its more enlightened and active members, have suggested the design of establishing an Agricultural Academy, where the seeds of this progressive improvement will be continually expanding, and shedding abroad over your district those fruits of industry and science, which shall fertilize your country and enrich your people.

The ill success of your applications to the Government, for aid towards establishing this Academy, has occasioned me some pain, and much apprehension—but the plan suggested by your correspondent above referred to, opens a way by which the design can be effected, independent of public assistance—and though I do not waive our right to draw upon the public treasury for the promotion of a public good, I should yet feel proud that the N. W. Society, by their own means, effected an object which may serve as a future lesson to legislators, and teach them that *prudence*, when exercised *against* improvement, is parsimony, and that wealth is only useful for extending knowledge and promoting the public weal.

I shall not invidiously contrast the happy state of Ulster with the southern districts of Ireland; nor state how many thousands it has cost the nation to restore them that peace and security which we enjoy. I should rather weep over the sorrows of my country, and obtain for them the extension of the blessings which we possess—but though we must forgive injuries we cannot so readily forget them; and therefore the refusal sinks deep in my mind.

I trust that at the next General Meeting of the Society, the plan of establishing an Agricultural Academy, by subscriptions or shares of ten pounds each, will be brought forward: and that every possible exertion will be used, to call the attention of the nobility and landed gentry to this object, and the means now proposed for effecting it; and for my own part, though a very humble individual, I shall be proud of becoming a subscriber.—I am &c. D.

If D. will employ occasionally a leisure hour in preparing a few paragraphs for our publication, we are much mistaken if he be not likely to contribute both to the amusement and to the instruction of our readers.

E.

ON THE MANAGEMENT OF HAY.

(Continued from No. 34, vol. I.)

In treating of an article of such value and importance as hay, it is worth while to inquire, what are the most advantageous and economical modes of using it.

Every good farmer is now sensible, that when any considerable quantity either of hay or other fodder is given to horses, sheep, or cattle, at once, the effect of their breath blowing upon it, joined to other causes, renders it so disagreeable, that they soon loath and refuse to eat it; in that way a considerable part of it is lost. On the contrary, when it is given frequently, and in small quantity, it contracts no disagreeable smell, and the animals eat up the whole. Farmers of a certain description will no doubt object to this mode of feeding, on account of the trouble with which it is attended. With them, it is a maxim that if the animals are fed once, or at most twice, in the twenty-four hours, it is sufficient; and that if they are hungry, they run no risk of starving, while they have food so near them. They do not, however, reflect upon the injury which the fodder thus used sustains by being breathed and trod upon, and impregnated with dung and urine. Let such men consider, for a moment, how they would relish the remains of their dinner served up for supper, after being kept within a yard of their nose during the interval, upon the same plates, with the same knives and forks, without any washing or cleaning. There are few people, indeed, who would not nauseate and reject such a meal.

The case cannot be very different with any of our domestic animals, when they have a quantity of hay or other fodder given them, sufficient for a whole day's consumption; having it constantly in their sight, and being blown and trod upon, impregnated with urine and otherwise injured, it becomes loathsome beyond description; and, in place of being eat up, which it always is when small quantities are given at a time, and frequently repeated, a great part is rejected. It ought therefore to be a rule with all farmers, to give little at a time, and repeat it frequently, always taking care that what was last given shall be consumed, before they receive an additional supply. By such management, no part of the fodder will be lost, and the animals will at the same time derive more benefit from the use of it.

Another economical practice remains to be mentioned namely, the mixing of straw with hay. From many trials in different parts of the country, it appears, that where good straw can be had in plenty, it may be mixed with hay to great advantage. Some farmers are in the habit of mixing straw with cutting grass, the benefit of which will be afterwards noticed. When straw is mixed with hay, the process of curing may be accelerated, and the quality of the hay at the same time improved, by leading out the straw to the field, mixing it intimately with the hay immediately after it is cut, and putting the whole into small hand-cocks, as soon as it is mixed. It is well known, that when moist and dry bodies are brought into contact, the former begin to give out a part of their moisture, which is as greedily absorbed by the latter, and continues to be so till a balance is established between them; or, in other words, till both contain an equal proportion of humidity. This is precisely what happens when dry straw is mixed with green herbage. Immediately after they are laid together, the straw begins to absorb a part of the juices, and continues to do so as long as the grass will part with any. In that way, every part of the natural juices is effectually preserved; and the straw, from the absorption of what would otherwise have been either evaporated by the sun, or washed by the rain, is rendered nearly equal in value to the hay. Where this practice is followed, and due pains taken in the mixing, very little exposure to the sun or atmosphere is necessary, and the hay will be fit for putting into the stack in half the time that is required where no straw is used.

In place of leading out the straw to the field, it is customary, in some parts of the country, to mix it with the hay in the stack, by laying alternate stratums of each, a practice that answers pretty well, but is much inferior to that above recommended. It may, however, be very useful in unfavourable seasons, and be the means of preserving hay that could not be cured otherwise.

When straw is mixed with grass for present use, a quantity sufficient for several days consumption should be cut at once, and after mixing, laid up in pretty large heaps, and allowed to remain in that state for a couple of days at least; at the end of which, the straw will be found much softened and impregnated with the juices of the grass. When a fair trial is given to this practice, several advantages will be found to arise from it: The first is, the conversion of a considerable quantity of straw, which would otherwise have been of little value, into a wholesome and nourishing article of food; the second, that grass so mixed, has not that purgative quality it is known to possess in its simple state, and seems to keep the bowels in a medium state, preventing alike the extremes of scouring and costiveness, circumstances of much importance to the health and strength of the animals.

It has been recommended, and to a certain extent practised by some farmers, to mix old and new hay. On this point, we have simply to observe, that if old hay has been well got, and properly secured in the stack, it will be found for many purposes superior to the new; it certainly contains a firmer and more concentrated nourishment than new hay can possibly do; and for all animals that are employed in constant and severe exertion, it is infinitely preferable. There is a period, however, beyond which, even the best old hay will, by being excessively dried, begin to be impaired in its quality, and be eaten with much less relish. In such cases, a mixture of new hay will be useful; as the old, by the absorption of the new juices, will recover a part of the moisture and flavour it had lost by long keeping. The same thing will happen, if the hay of the former year has been of an inferior quality, owing either to its having been allowed to stand too long before cutting, or to its being bleached with rain after it is cut. In either of these cases, the defect will be in some degree repaired, by mixing it with new juicy, well-flavoured herbage. A. Z.

INFANT SCHOOLS.

(Contiuued from page 240.)

Mr. Brougham—My Lord, I have been requested to propose the first resolution, an office which I execute with much pleasure, though, as my noble friend has already stated the success of these schools, and so distinctly remarked upon their advantages, and encountered objections so ably, that I naturally feel that very few observations are left for me to make; but there is one other objection I will mention—It has been urged by some that we are aiming at carrying education too far, that we are drawing it out to an extravagant length, and not content with affording education to children of a proper age, we are now anxious to educate mere infants incapable of receiving any benefit. In the first place I observe, that this objection comes from those very persons who object to education being given to children when more advanced in age, because, then, their parents begin to find them useful in labour, and consequently cannot spare so much of their time as might be requisite—surely there can be no stronger argument than this very plea of their own to prove, that the education of the children should commence at that time when their labour can be of no value to their parents; but there is another answer still more decisive—it is found even at the age of seven or eight, that children are not void of those propensities, or I might even say of those habits which are the forerunners of vice, and I can give no better illustration of this, than the fact of a child of only eight years old, being convicted of a capital offence at our tribunals of justice; when, therefore, I find that at this early period of life, these habits of vice are formed, it seems to me that we ought to begin still earlier to store their minds with such tastes, and to instruct them in such a manner, as to exclude the admission of those practices that lead to such early crime and depravity. My noble friend has justly stated, that it is not with the experience of yesterday that we come armed to the contest—it is not a *speculation* that we are bringing forward to your notice, but an experiment. It is now six years since an establishment was first commenced in Brewer-street, Westminster, where success has always been attendant on our exertions. Since that time Mr. J. Wilson has established a similar school in Spitalfields; and his brother one at Walthamstow, which if possible, is conducted on a plan more approaching to perfection than its rivals. (Mr. B. then states the number of pupils at the different schools in London amounting to 640) Thus surely but slowly the system is marching on, and I have no doubt of its ultimate success. A school also has been established at Bristol, and out of that seven more had arisen in the west of England. These instances may show that though it was at first nothing but an obscure establishment, where its success was scrutinized before it was published, its own merits have caused it to spread, and become known as recommended by experience. Hence it is with confidence we call for the public support. I would farther observe, that in leaving poor children to the care of their parents neglect is the least that happens: it too frequently occurs that they are turned over to delegates, where they meet with the worst treatment; so that we do not, in fact, come so much into contact with the parents themselves, as with these delegates, who are so utterly unfit for the office they undertake. It is to carry the experiment further that we now come before the public, for the purpose of erecting a *central model school*, where masters might be trained for the purpose of supplying schools elsewhere. When we find that children, under four years old, may by habit be accustomed to be, if not criminals, at least ready to be so as soon as their physical strength will permit; when we find that temper, the great handmaid to irregularity and vice, is capable of being permanently changed, I think no man who considers how much of the prosperity of the country depends on the lower classes, can refuse to lend his heart and hand to support so good a work. I beg leave to move that this meeting is strongly impressed with a sense of the many and great benefits, moral and political, which may be expected to result from the general establishment throughout the united kingdom, and especially in populous towns and villages, of infant schools like those already formed in Westminster, &c.

Mr. Wilberforce—The former speakers had so ably stated that the political welfare depends on the moral welfare, and the moral on the religious, it was superfluous for him to observe that they could not begin too soon to impress religious principles on the minds of the young. It was an affecting consideration that while great statesmen had been busied in their closets on some fine scheme of speculation, they had neglected those salutary principles which the Almighty had given to mankind. It was remarkable how eagerly the young mind received the little stories in the Bible, and how well they were fitted to work on their dispositions. And when he considered the miserable state of the poor, he could not but feel that they were in some degree the authors of it, in having neglected to afford them the means of education.

Mr. Smith, M. P.—Having been one of those who early joined this Society, he might, perhaps, be excused if he gave a short history of it. The real fact was, that the character of all mankind was formed very early, much earlier than might be supposed. At the age of two or three, dispositions are found in children of a description the most objectionable. In these schools a disposition of mutual kindness and assistance was carried as far as could be well conceived, and it was most delightful to regard the conduct of the children towards each other. Instead of opposition they displayed mutual good will, inculcated to the greatest degree, so as to destroy, in the minds of the children, that selfishness which was the bane of our nature. Such effects appeared almost to realise the golden age, for the children appeared always happy, and never so happy as when attending the schools. The whole principle upon which this was conducted was not fear but love, from which principle alone good could come. When the child was intimidated its mind was cramped, and it was necessary to give it confidence before its faculties could be called into action. There was frequently great difficulty in selecting proper teachers, and therefore the central school was proposed for the purpose of training the instructors into a right course, and teaching them the great secret of mingling patience with firmness, the only way of carrying those points which had gained the admiration of every visitor at these schools. —He moved that for the purpose of extending this system—A society be now instituted called the Infant Schools' Society, to establish an Institution in London which while it affords instruction to the adjoining population, may also serve as a model of imitation and as a Seminary for training masters and mistresses to form and superintend schools.

Sir J. Mackintosh.—The assembly had heard that the experiment had been made to extend the bounds of education to an age, which though young was yet capable of receiving indelible impressions. The experiment had been made on upwards of 1000 children, and at different places, to determine whether children could be rescued from the fangs of guilt, and whether at so early a period the field of virtue might be laid open to them, that they might sport in its paths.—They had heard likewise of the success of these endeavours, and now they had justly the right to claim the assistance of all; for what could have a better claim than such an institution as this? The question was not with respect to the removal of children from kind and watchful parents, but whether the children of careless parents should frequent those haunts that would lead them to the gallows.—To the gentlemen present he would recommend this charity as one less attended with perplexity in its operations or doubt as to its utility, than many others which have failed in effecting the promised good. But in this the most acute opponent could not discover any mischief to arise from its success, and the only conceivable objection that might be stated, that it might do less good than was expected, would sink to nothing before the good that it did accomplish. Money given to the poor might in some instances do harm, but when they were called upon to contribute to the kind temper and good principles of the rising generation, he thought that none could withstand the plea. He moved that a subscription be entered into, &c.

W. Allen, Esq.—Felt with his venerable friend Mr. W. that the strength of every country depended upon a firm and deep-rooted religious feeling: without this basis all human plans of improvement must fall, and be swept away as a vision. Under the present system of educating young children, love and affection would be cherished, instead of that distant and repulsive feeling which children of different sects would imbibe, if educated apart.

Lord Calthorpe.—The Resolution in his hand, was for the appointment of a Committee to whom the management of the institution might be entrusted.

With respect to the objection made, on the ground that it separated parents from their children it had been ably answered. And yet he felt that it was entitled to some consideration, because it came not from men averse to all education of the lower orders, but from benevolent, religious, and conscientious men. He thought the present system totally in accordance with the dictates of nature. Nothing was more calculated to gratify a benevolent mind than a view of the schools conducted upon the system now proposed to be extended; the happiness, the comfort, and moral improvement to be seen in them were truly pleasing. He would ask whether in the lower classes of society, it was desirable that children should be always with their parents? Was it not the fact that in the case of the labouring classes there was often to be found such a monstrous inversion of nature, that from the lips which at first lavished the never ceasing caresses of maternal fondness, the child, at moments of irritation or of disappointment, often heard language which should never meet its ear, and learned that of which it should have remained for ever ignorant? This institution provided a remedy against that evil, and held forth benefits at which humanity ought to exult. There was another point upon which he entertained sanguine hopes of benefit from the system of education. It had been satisfactorily proved by the attempts made to educate poor children, that their parents, who appeared inaccessible to all instruction, who refused all instruction when attempted to be influenced by hope or fear, have by that instinctive parental fondness found in all, listened to the sacred truths, when repeated from the lips of their offspring, thus accomplishing that which was thought impossible, by the lips of babes and sucklings.

The Rev. E. Irving seconded the Resolution.—The infant state was the period at which to commence education. If any one doubted this let him attempt the education of a grown man, and he would find what slow progress he would make—he would find what slow approaches he would make to his intellect. He might persevere, but in the end he feared he might find it too late.

Let him take a younger subject, say nine or ten years of age, and it would be found what obstructions lay in the way from the rudiments of evil already far advanced. In short he must go back, and find the very germ of the child's intellect, before its roots were shot forth into an unhealthy soil, and ere it was engrafted upon by the fulsome plants by which it was surrounded. The Rev. gentleman went on to describe the school at Walthamstow, and expressed the great satisfaction he felt at witnessing the happiness, the kindness, and love which existed among the children, owing to the very excellent method adopted in educating them, and attending to their morals and dispositions He could trace the difference between the child just entered, and him who had been a little time on the establishment, and also between the latter and one more educated, and so on up to the highest class, who were all life, intelligence, and good feeling. This was not exaggeration, it was within the fact, and his description of it was faint, because he could not find words to express his feelings on the occasion. He would ask—could any parent in the lower classes afford time, or possess ability to work out these sweet influences? Certainly not. If the mass of the population were stupid or uneducated, who were to blame but the upper classes, who neglected their instruction? He hoped the meeting would persevere in the good work they had undertaken, and they would be the means under God, of destroying that hydra of discord and confusion which lives and preys upon the bowels of every land on the face of the earth. With a committee composed like this, of statesmen, scholars, philanthropists, and men of science and skill, they might expect the most happy results; and he prayed that the father of the spirits of men would pour down his blessing on their undertaking, and bring it to perfection.

Dr. Lushington said he always thought the man the greatest benefactor to his country who did most for the suppression of crime.—Those acquainted with our prisons must know, that those found to have sunk deepest into vice and crime were persons who had never received any education, moral or religious. In the Refuge for the Destitute an exact account was kept, and it was found that of the great mass of culprits sent there by the magistrates on account of their youth, two-thirds were the children of parents who had no opportunity of educating them. By this institution they would at once promote virtue and prevent vice. It is not necessary to adduce instances of the folly of hoping to repress crime by severity: that system has now proved ineffectual, and, thank God, we are now entering upon a different course—a system of kindness and benevolence, which will smooth the poor man's path in this life, and teach him to hope for happiness in the next.

The Marquess of Landsdown returned thanks. He had received some letters since he came into the room, suggesting means of promoting the object they all had in view; one was from a correspondent of that sex whose exertions were never yet wanting, in the cause of kindness and benevolence. It was from Miss Neale, who stated that an infant school had been established in Putney, on a very cheap plan. The object of this school was not confined to the instruction of children only, but provided means also of instructing female servants in the knowledge suited to their calling, thus combining in the best manner, moral and religious culture, with instruction preparatory to their entrance on the duties of life.

Sir J. Mackintosh then stated, that considerable sums had already been subscribed—he was happy to find that the small subscriptions had been no less gratefully received and applauded than the larger sums; in the eye of reason, all circumstances considered, the smaller donation was entitled to the higher praise.

Upwards of £700 was collected before the meeting separated.

CURRENT PRICES IN DERRY.

Oatmeal,	...	15	0	*to*	16	0	*per cwt of* 120lb.
Oats,	...	0	11	–	1	0	*per stone.*
Barley,	...	1	0	–	1	4	
Potatoes,	...	0	4	–	0	5	
Beef,	...	0	5	–	0	7	*per pound.*
Mutton,	...	0	4	–	0	7	
Veal,	...	0	6	–	0	10	
Butter,	...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax,		45	0	–	56	0	*per cwt. undressed.*
Five hank yarn		2	8	–	3	2	*per spangle.*
Four, do. do.		2	6	–	2	9	
Three, do. do.		2	5	–	2	10	
One, do. do.		2	0	–	2	6	
Coarse Bagging,		2	6	–	3	0	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. Presdent,
Londonderry.

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N. W. SOCIETY'S MAGAZINE.

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To the Members of the North West Society.

Gentlemen—At the close of the last session of Parliament, I called your attention to the report of a select committee of the House of Commons, on Irish affairs. It was extremely silly, and with the exception of that of the Countess of Glengall, the evidence laid before it was equally so. This session has produced another committee from which little advantage could arise, inasmuch as the range of evidence within its reach was greatly circumscribed, and without meaning offence to any of the gentlemen examined, I must take the liberty of saying, they are not the sort of people from whom much information of great value could reasonably be expected—lawyers of a certain rank and leaning—gentlemen of the police must have a stronger bias—but the enquiry was into *disturbances* existing in Ireland, and the necessity of continuing the *insurrection act*. All this, perhaps, may appear not to touch you, but to borrow an expression from lawyers, it goes to your character. Indeed, so generally do the members of Parliament apply this sort of evidence, that many are stated to have expressed their astonishment that the gentlemen of Ulster have not petitioned the Lord Lieutenant to afford them the protection of the insurrection act. Nor is it wonderful that things are so, when such a speech as that which is given in the newspapers, as having been delivered by the Bishop of Limerick, remains, as far as we can learn, uncontradicted, and gets abroad sanctioned by the name of a person so respectable. His Lordship is reported to have said—" There are two great defects in the so- " cial system in Ireland; the first arises from " the want of that public principle, whose " influence is found so beneficial in this coun- " try. That great evil is illustrated in the " practice so well known in Ireland, under " the designation of jobbing. The second " defect in the social system in Ireland is to " be traced in the harsh, overbearing, and ty- " rannic conduct of landlords of a certain de- " scription. The treatment which the warm- " hearted peasantry of that country receive at " their hands, is most revolting to every gene- " rous mind. These men treat their tenantry " as if they were an inferior race of beings." This is reported to be a speech in Parliament by a Bishop. The following is an extract from a new publication, by a deservedly popular writer, and it is whispered, a judge:— " But Mr. North is for committing Ireland to " the management (I had almost said to the " custody) of its country gentlemen. Is this " because they have managed it so wisely, di- " ligently, and prosperously heretofore? Is " it policy to surrender the peasantry of Ire- " land to those, who, (if Mr. North be right) " having run the gauntlet of education thro' " Eton, Oxford, and a continental tour, re- " turn to give their tenantry the fruit of all " their studies, by discovering in their fathers' " leases certain flaws, which shall deprive " them of their estates." When such are the opinions published by such persons of the gentry of Ireland, it is not to be wondered, that Mr. North was laughed to silence, when he talked of their contributing to the improvement of their country. That you the N. W. Society, including a few noblemen, a numerous gentry, your resident clergy, and your commercial, manufacturing, and agricultural orders have contributed much to the improvement of your country, is my opinion—that even the omnipotence of Parliament can do nothing without you or such as you, I am of opinion also; and I am not less fixed in my belief that the exertion of you all is necessary to shield you from the consequences of the ignorance of that Parliament which considers you a fit object of laughter. But that you may be enabled by your joint endeavours to improve your country, it is necessary that you should stand well, one with the other—that you should stand tolerably well in your own eyes. It has somehow become fashionable to lend a willing ear to the abuse of Irishmen—they are thought well of only when they beg. If they lay claim to any thing whatever, as a matter of right, it is disputed, and successfully. Notwithstanding this inclination of the public mind, I claim for each, and every order among you, a rank as high as persons similarly circumstanced can challenge for themselves in England ; and to the account which it has pleased the Bishop to give of you in his last speech, and for which he stands as the authority himself, I shall oppose his Lordship's own authority upon another occasion. In his charge to his clergy, about this time last year, he is stated to have said, that in the north there was an affluent and educated resident gentry, an intelligent, industrious yeomanry, a thriving manufacture, a general diffusion of knowledge, through the instrumentality of schools, which are liberally maintained, and in addition to the pastors of the land, a body of presbyterian teachers, whose naturally strong minds have been trained to investigation in academical institutions, both at home and in North Britain. That this is all true, with a little grain of allowance as to the affluence which his Lordship bestows upon you I believe. At all events, it is a sufficient answer to the speech said to be delivered in the House of Lords. As to the pamphlet, I do not recollect that Mr. North proposed to commit Ireland either to the management or custody of its country gentlemen, but if he had, it would not be a conclusive argument against his proposal, to ask if it was because they had so wisely, diligently, and prosperously managed it heretofore? You, gentlemen of the N. W. District, well know that your gentry have never had any share in the management of their country. I well know that their greatest fault is inattention to public affairs—I know that their advice has not been asked by government for the last 20 years, that when it has been offered, it has been neglected, and that their agency has never been resorted to, save to carry into execution some measure of which they disapproved. I could easily enumerate many instances of the endeavours of your gentry to ward from you severe calamities, inflicted by the Parliament in its more serious moments, which would suffice to shew how ill it now befits them to indulge in laughter at your expense. But this is not the place for such communications. You are told that all is right in England, and that nothing more is wanting to your happiness, than that your peasantry should imitate the lamb-like obedience of their brethren in Britain, and your landlords the honesty and condescension of their peers across the water. The Bishop and the judge have set me to look over some files of newspapers for your edification. I myself have seen the thing—but in vain should I report what I had seen, certain to be contradicted and borne down by those who would exalt our elder sister at our expense. Read the following few quotations—reflect and say have you not reason to be satisfied with the land of your nativity or residence. In the end of May last, an application was made in the King's Bench, for a criminal information against a gentleman in the immediate vicinity of London, for allowing a false table of tolls to be kept up, by which one horse carts were obliged, from July till October in last year, to pay four pence half-penny instead of three pence each. It appeared that the defendant acted in the capacity of treasurer to the trust, as chairman of the trustees who were to appoint the time when the treasurer should produce his accounts, and to audit them when produced, and occasionally sat on the bench as a magistrate, when complaints of extortion were made. It appeared that the act of Parliament protects the extortioners from punishment by indictment. I shall add the observation of a powerful periodical writer—" In short, if the matter be well sifted, it will be found that there must be a pretty general breaking up of the present system of managing these roads. The public are so *shamefully fleeced*, that it is impossible, one would think, for the government not to do something to change the system."—The above is from Cobbett. From the Morning Chronicle, of the end of last February, I take the following :—

STATE OF ENGLAND.

" We refer our readers to an article in another column, headed " Attacks on Agricultural Machinery," containing an account of riotous assemblages of labourers in different parts of Suffolk, to compel farmers, by force, to desist from using various articles for simplifying agricultural labour, such as drain-ploughs, thrashing machines, &c. In this object they have, it appears, been successful.—In the case of the assemblage at Mr. George Robinson's, of Chedistone, near Halesworth, it is said,—" The Churchwarden, Overseer, and several respectable inhabitants of Chedistone, and elsewhere, arrived at Mr. Robinson's farm, *and they remonstrated freely and firmly with all the parties—with Mr. R. as well as the men.*"—The mob having succeeded in their object, departed peaceably, threatening destruction to the machinery, should the owner attempt again to use it.

By an article in the *Bury* and *Norwich Post*, of the 31st of January, it appears, that "the number of prisoners at present confined in our Gaol (including 17 debtors) amounts to 149—30 of whom are for offences under the Game Laws." The gaol here alluded to is Ipswich. Allowing something like an equal proportion of poachers for the other prisons in Suffolk, taking the Gaol Returns of 1820 for our guide, the total number of poachers now in prison in that county would be about 90. What a state of things! We have here, on the one hand, the landowners availing themselves of laws which are a disgrace to a christian country, cramming the prisons with a starving peasantry, breaking up families, and inflicting the most severe punishments for acts which the people no where consider in the light of crimes—thus exciting in the minds of all who witness these punishments a contempt for the law, and a hatred of that class for whose brutal gratification the Game Laws have been passed. We have, on the other hand, a peasantry openly setting the laws at defiance, and banded to obstruct the tenants in the free disposal of their property—in fact, establishing a complete system of terrorism. By and bye we shall find them imposing a maximum of price. We may see from the example of Suffolk, the endless mischiefs which result from a departure from justice and sound principles.—*Morn. Chron.*

Now, gentlemen, what say you to English jobbing? and remember here an act of Parliament protects the jobbers. One road act, framed while Ireland had a Parliament, left a power of indicting every fraud doubly—once as fraud—again as perjury. It also left a right of traverse to the humblest contributor to the county tax. What say you to the obedient respect for the law exhibited on all occasions by the English peasantry. What to the amiable kindness of the aristocracy to their tenants. I could furnish you with instances of tyrannical abuses of the game laws that would not disgrace the family of the Norman conqueror. And yet when men in Parliament talk of the power of English gentlemen to improve their country, they have not their ears stunned with roars of laughter. I could furnish you with instances innumerable of arbitrary proceedings by magistrates, yet do we not hear of an attempt to improve the English magistracy, by insulting them or purging the magistracy as it is called, by expunging from the rolls the names of noblemen and general officers who have gone, perhaps, to their long home, or at least who have been long away from this. Gentlemen, the truth is, the Bishop of Limerick had you not in his eye when he charged the House of Lords, but spoke the words of truth and soberness, when he charged his clergy. Heaven forbid that I should condescend to flatter individuals, or masses of individuals, but truth obliges me to say that as there is no part of England so capable of improvement as your district, so is there none which has within so much bounds so unexceptionable a population. And this I state, let who will laugh, or write, or make orations to the contrary.

We continue our extract from the writer in Blackwood on whom we animadverted in our 30th number; he proceeds to give his ideas of the methods necessary for the improvement of this country. "Our next grand object," he says, "would be to amend the form of rustic society in Ireland, and to form a channel by which the opinions and feelings of upper classes might flow upon the peasantry. We would select an individual for the Lord Lieutenant, who should enjoy the confidence and esteem of the landholders—of the wealth and intelligence of Ireland. He should in addition to his other qualifications, be attached to agriculture, and perfectly skilled in the structure of English Society. Instead of shutting himself up in his castle to dream of his own importance, he should spend a large portion of his time in visiting different parts of the country, to make himself acquainted with its localities, and the state of the inhabitants, to scatter the seeds of civilization—to bring into fashion its curiosities, lakes, and scenery—and to ingratiate himself with the lords of the soil, and lead them to make their country the scene of summer attraction and festivity. He should strain every nerve to allure back the absentees, and to prevail on the landholders to adopt the English mode of managing their estates. His grand object should be the abolition of the jobbers and the multiplication of good sized farms with a view to the creation of substantial intelligent, and well-principled yeomanry. The absence of such a yeomanry in Ireland is a national grievance of the first magnitude, and the energies of the government could not be better employed than in endeavours to form one. A Lord Lieutenant by patronage, official appointments, and recommendations to honours—by granting government aid in the making of roads, canals, drains, &c. for the improvement of estates, and by various other means—might constitute himself the leader and the bond of union of the landlords, in re-modelling society among the peasantry. Every one who knows any thing of human nature may easily conceive what effects the repeated visits of the Lord Lieutenant would have even in the most barbarous districts of Ireland. How greatly would it animate the good and discourage the turbulent? How beneficially would it operate on local authorities, and on all who have power over the peasantry? how many petty abuses and evils would it silently destroy; how much would it contribute to the subduing of party madness? what money would it cause to be expended among the country people, and how powerfully would it work in promoting civilization; how mightily would it tend to correct vicious opinions, and to circulate good and loyal principles! And how irresistible would be the interest, favours, and appeals of the Lord Lieutenant, over the landholders and gentry, with regard to bettering the condition of the peasantry! Ireland wants a Lord Lieutenant like this—a rich English nobleman of the old school, a man free from party trammels and from party spirit; conciliatory, hospitable, and generous; well versed in the management of a large estate, and perfectly competent to put a country population into the proper form and condition. Ireland wants a Lord Lieutenant like this.—A large part of her principal evils cannot be reached at all by legislation, and the remainder of them can only be acted upon by it when the landlords shall be combined into a body (we say body because we fear they will never accomplish much so long as they act singly) to give it direction and effect.

"A numerous, respectable and intelligent yeomanry—or in other words a proper and natural number of large farmers, would do more towards INSTRUCTING the peasantry, than all the schools that can be established—and they would do more towards the keeping the peasantry in ORDER, than the Insurrection Act, or any law that can be framed.—Such farmers frequent fairs and markets weekly, read the public prints, mix with the respectable traders and other residents of towns, and thus become acquainted with the habits and opinions of their superiors whom they endeavour to imitate as far as possible.—The labourers are under their control, are constantly or frequently in their houses, apply to them for advice, copy them as far as they are able in every thing, and thus learn from them what they learn from the higher classes. The labourers learn from the farmers what is of far more importance to themselves and to the country at large, than a knowledge of reading and writing—they learn good conduct, domestic management, just opinions touching right and wrong, and the rules of civilized and social life. The farmer's eyes are constantly upon his labourers, their bread is in his hands; he thus possesses ample ability for compelling them to practice instruction, as well as to hear it—for restraining them from vice, as well as crime—and his own interest prompts him to the continual exercise of this ability.

"The present state of the Irish peasantry is one of the most extraordinary things that the world exhibits in this age of civilization and refinement. The trade, occupation, bread, and consequently conduct of every man who lives on an estate, are directly, or indirectly, in the hands of the owner of that estate. None but those who have been familiarized with English farmers and cottagers, can conceive the degree of awe which actuates them in regard to their landlords.—What will his landlord say? is the common exclamation, if any of them happen to be guilty of misconduct. The English landlord's influence does not slumber. We have ourselves seen farmers deprived of their farms for frequent drunkenness—for leading immoral lives—for being bad cultivators, and we have known a farmer compelled to marry a girl whom be had seduced, by his landlord's laying before him as an alternative, marriage or the loss of his farms. This operates in the most powerful manner, in preventing vice and crime; and in giving the best tone to what may be called, the opinion of the rustic world. The Irish landlords might if they pleased exercise similar influence over those who live on their estates; they might if they pleased only let their land to men of good conduct and character; and they might enjoy the same mighty means of controlling their tenants. Instead of this a large portion of those who occupy their land know nothing of them, and care not a straw for them. Yet these landlords are not barbarians—men ignorant of, and without the means of becoming acquainted with their interest and duty.—They are persons of rank, education, and wealth, who see the world, and who mix with the English landholders. The contrast between themselves, and a large portion of those who occupy their land, fills us with reflections which we shall conceal; but we cannot refrain saying, that it would be far less infamous for a man to suffer his domestic servants to be prostitutes and pickpockets, than for him to suffer his land to be occupied by rogues and assassins. We are also very certain that with regard to instruction, the influence of the landlord's might be almost irresistible. The words of a good landlord, in regard to what is just and reasonable, will never be addressed in vain to his tenantry."

Although this writer in the quotations we have before made, speaks rather discouragingly of the effects to be expected from schools, he admits that they may however be of some service; perhaps they will operate the most beneficially, in personally interesting the nobility and gentry of Ireland in ameliorating the condition of the peasantry. Men do not love defeat. After commencing an undertaking, they will make sacrifices for its success, which nothing could have wrung from them previously. Perhaps the man who begins by interesting himself in a school, may end in lowering his rents, enlarging the size of his farms, and employing his influence in aid of meritorious and useful ministers.

NORTH WEST SOCIETY.

The General Meeitng of the Committee will take place at the King's Arms, Londonderry, on Tuesday the 13th July, at twelve o'clock.

By order,
1824. W. MARSHALL, Sec.

VETCHES.

(From the Irish Farmers' Journal.)

Vetches, properly tares, but better known in Ireland under the former appellation, are now coming into the highest esteem, with the best farmers as a soiling crop; and for this purpose, it has been suggested by one of our most experienced practical men, that, in order to a profitable succession, they should be sown every month in the year, except in November and December. Those sown in September will yield an early swarth in May, and as the different successions are carted off, the ground may be applied to such other crops as suit the different seasons respectively.

In the months of slowest vegetation, the quantity of seed must be increased, but for the rest, four bushels to the plantation acre, broadcast, will on good land, return a heavy crop. It is doubted, whether it is better to sow broadcast or in drills—the former is the most usual mode, but the latter has been tried with good success, and requires less seed. It is, however, unnecessary to deviate from the common broadcast method. The seed will bear a moderate covering at the time of sowing, and the winter successions should be shovelled to let off the water; but after the plant is over ground, no moulding should be added.

Nature of the Soil.—Vetches will grow in the various gradations of soil, from light to rich, and without manure, if the land be in tolerable order—for a seeding crop, richness of soil is to be avoided; for a soiling crop of best produce it should be sought; but an excellent return may be had, in a rotation system, even at some distance from the manure—for instance, in a five course crop thus:—

1. Potatoes, or turnips, with manure.
2. Wheat or barley.
3. Vetches.
4. Oats.
5. Vetches.*

The last crop, if not rich enough for soiling, is sure to furnish a valuable result of seed, which may threshed out, if there be a remunerating price, and if left in the haulm, it constitutes the best fodder for working horses, cattle, and sheep.

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* A new and excellent method of preparing the land for vetches in both cases, but particularly in the latter, is by trench ploughing—that is, by letting a second plough follow in the same furrow.

In short, it is not easy to misapply this useful species of pulse, either in its cultivation or its produce—and as the ameliorating part of a succession system it becomes highly valuable.

Culture.—Upon ground in tolerable order, one ploughing is sufficient—a stroke of the harrow should smooth the surface for the reception of the seed, and a light harrowing after it is sown, finishes.

Nevertheless, in Flanders they sow in their clay ground, upon a deeply ploughed surface in October, without harrowing, trusting to the frosts to moulder down sufficient covering, and conceiving that the rough and humpy state of the clay permits the air to circulate at the roots of the crop and to prevent its rotting—they cut it high, and of course leave much behind, to which they don't object, as they plough it in immediately for manure.

But though we may derive useful hints from foreign countries, as well as from parts of England and Scotland, yet the Irish farmer wishes to see them exemplified in his own soil and climate; and it is very satisfactory that this country possesses men of talent and perserverance, to establish the best farming practices by fair and patient experiment.

On the vetch subject, as on many others in agriculture, there is no one more competent to afford information than Mr. Nolan, of the county of Meath.—One farm of his last year exhibited eighty plantation acres of this crop, growing in its best perfection. He had nearly the same quantity the former year, which supported all the cattle by which twenty ploughs and ten carts were constantly worked, together with a great number of stores, and young cattle of every description.

J. R.

Irish Mines.—We had much pleasure last week in seeing several tons of Irish Iron ore entered for export on the *Janet*, of Kincardine, Cardiff. We understand that the ore is of excellent quality, and that this commencement bids fair to open the way to an extensive and highly profitable branch of commerce, of very peculiar interest at this moment when public attention is turned towards the discovery of mineral riches in Ireland. This ore is from Parkstown, county Kilkenny. It is from a plentiful and very rich bed, and other valuable minerals are supposed to be in the neighbourhood—*Waterford Paper.*

Notwithstanding the standing orders introduced by Lord Lauderdale, the Irish mining Bill, thanks to Lord Harrowby, has been read a second time. The question passed with scarcely any opposition. There is no doubt that the Bill will finally become a law, and a fair prospect will be opened to the industry and capital, and what we own, gratifies us much more, timely relief to a part at least of the population of the country.—There will be *some* employment at any rate, and the very impetus given will have the effect of producing more.

New invention.—We have seldom been more gratified than we were the other day in seeing the works of Lady-pit, and observing the process by which the manufacturers obtain the lye from the waste of bleachers' stills, and use it instead of potash in bleaching linen and cotton; and for which application of such lye, Messrs. Turner and Angell, of White-haven, have lately obtained a patent. The patentees have merely a pit made water tight, into which when the stills are wrought off, they suffer the residuum to run, placing a layer of small pit-coal at the bottom of the pit, and above each running off of the stills. When the pit is full, the residuum is taken out and put into a furnace, from which it is drawn out in cakes. These cakes are broken and thrown into a soap-maker's vat, and the lyes obtained therefrom are used instead of potash, in boiling linen and cotton goods.—One man in the course of twelve hours draws out of their furnace, which is not a large one, twelve cakes which fill a vat yielding alkaline lyes sufficient to bleach a full white, two tons of linen yarn. This is obtained at an expense of two four-bushel cart loads of coals, and one man's labour, and if we recollect right, may be obtained from about sixteen bushels of salt used in making bleachers' chemic. The patentees allow nothing for setting the vats; they consider the value of the soaper's waste as manure, will be in most situations equal to it. Thus is the waste of the bleachers' stills, which has hitherto been a nuisance, and cost something to remove from his premises, by a very simple and cheap operation converted into a substitute for potash. To the bleacher who recovers his spent lyes, this would appear to be a saving of all he pays for potash, as we are informed the latter operation is more expensive than the former. If we look at the extensive consumption of potash in bleaching in this kingdom, the saving seems immense. Into Liverpool alone during the last year, there were imported upwards of 30,000 casks of American potash, the greatest part of which will be used by the bleacher. Important as this saving appears, the excellent invention of Turner and Angell comprehends another object of almost equal importance; it renders this country independent of foreign supply in an article of the first necessity in two of the greatest branches of its manufacture.—*W. Gazette.*

EXTRACTS FROM WHITE'S FARRIERY.

Introduction.—As the preservation of the horse's health is an object of the highest importance, I shall begin my treatise with some observations on that subject. The most effectual method of accomplishing this is to keep him in a wholesome stable, to feed him properly, and to observe all those attentions which, taken together, and considered generally, are named grooming. According to this view of the subject, the first object of consideration is the construction and arrangement of the stable.

CHAPTER I.

On the Stable.—Loftiness is very desirable in a stable, and, when it can be made from fifteen to twenty feet high, ventilation becomes a matter of no great importance. It should never be less than twelve feet high, and then some method of ventilation becomes necessary. A chimney or square opening in the ceiling, communicating with the open air, is the best method; or it may be made in the form of a dome or cupola, which would be more ornamental. The chimney need not be open at the top so as to admit the rain, but should be roofed, and have lateral openings by means of weather-boards, as they are termed. As to the admission of air into a stable, the usual means provided for that purpose are quite sufficient; that is, by windows. The method adopted in barrack stables, of making an opening in the wall, near the ground at the end of the stable, is useless, to say the best of it. A stable when properly paved, and kept moderately clean, requires only a shallow wide gutter, twelve inches wide, one inch deep. The best floor for a stable, by far, is hard brick; and, next to that lime-stone, not less than one foot square. I have seen a stable belonging to Mr. Lovell, of Wells, that is thus paved, but with wider stones, and so chipped as to have numerous small furrows, all of them tending towards the centre and back part, and I never before saw so clean or so nice a stable, except one belonging to Mr. Atkinson, at Cheddington, and that I think was superior to any I ever met with, especially in its interior arrangement. The floor of the stall should never incline more than one inch in a yard, and the inclination should be continued back to the gutter only. Some litter should always be allowed for a horse to stale upon, which should be swept away as often as is necessary. This, with a pail or two of water thrown upon the floor, and swept off while the horse is at exercise, will keep the stable perfectly clean and free from offensive smells. The depth of a stable should never be less than twenty feet, nor the height, as I observed before, less than twelve. The width of a stall should not be less than six feet clear. But, when there is sufficient room, it is a much better plan to allow each horse a space of ten or twelve feet, where he may be loose and exercise himself a little. This will be an effectual means of avoiding swollen heels, and a great relief to horses that are worked hard. With respect to the rack and manger, I have given a plate of one which I have seen employed in a waggon-stable with the best effect. It is intended for two horses; for horses when a little accustomed to each other, and working together, will always agree well when kept in the same stall, especially when they have, as is the case here, separate mangers, and are prevented by their halters from interfering with each other's corn. The space for two horses is twelve feet. The mangers and rack are all on a level, and about three feet from the ground. The mangers should never be less than eighteen inches deep, eighteen inches from the front to the back part, and two feet in length. The rack should be four feet for one horse; for though the plate represents a stall for two horses, the same kind of contrivance is equally or better adapted for one, and that is what I am now describing. The rack is represented with staves in the front, like a common rack, but this is not necessary; indeed it is better to have it closed in front. The back part of the rack should be an inclined plane made of wood; should be gradually sloped towards the front; and should terminate about 2 feet down. Such a rack will hold more hay than ever ought to be put before one horse. The advantages of this rack are numerous. In the first place the hay is easily put into it, and renders a hay-loft over the stable unnecessary; and this may be an inducement to the builder to make the stable as lofty as it ought to be, and render other ventilation unnecessary. All the hay that is put into this manger will be eaten; but in the common rack it is well known that a large portion of the hay is often pulled down upon the litter and trodden upon, whereby a considerable quantity is often wasted. It prevents the hay-seeds or dust from falling upon the horse, or into his eyes; and what is of considerable importance, though seldom attended to, there will be an inducement to the groom to give the horse hay in small quantities at a time, and frequently, from the little trouble which attends putting it into the rack. The saving in hay that may be effected by the use of this rack is so apparent that it need not be dwelt upon. A great saving also may be made in oats by so fastening the horse's head during the time of feeding that he cannot throw any of them out of the manger. If a horse is allowed a peck of oats a day, and has, as he may have, one-eighth part thus saved, it will amount to nearly a peck in a week. There must not, however, be a diminution in the horse's allowance on this account, if my advice with respect to feeding be followed.—He must have one peck of oats in twenty-four hours, but then he must not have more than from eight to twelve pounds of the best hay in that time, given at four, or three times at least. In the rack I have now been describing, every ounce of that hay will be consumed by the horse, will be perfectly digested and keep the stomach in health.* This kind of rack and manger, from being boarded up in front, will effectually prevent the litter from being kept constantly under the horse's head and eyes, by which he is compelled to breathe the vapours which arise from it. It will also prevent him from getting his head under the manger as sometimes happens, by which means, not unfrequently, the poll evil is produced. The length of the halter should be only four feet from the headstall to the ring through which it passes: this will admit of his lying down with ease, and that is all which is required. The ring should be placed close to that side where the manger is, and not in the centre of the stall. The sides of the stall should be sufficiently high and deep to prevent horses from biting and kicking each other. In post and waggon stables, where the stall is made for a pair of horses, the manger will be placed at each end, as described in the plate, and the rack in the centre. It well then be necessary to put one bar in the centre of the rack on the top, from the front to the back part, to prevent a horse from throwing out the hay with his nose.—This I have seen absolutely necessary in a waggon stable. But in this case there was an unlimited quantity of hay allowed, and that often of a bad quality, which probably was the cause of the horses throwing it out with their noses, but the cross-bar prevented them.

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* In one of the best hunting stables I have seen, Colonel Berkeley's, of Berkeley Castle, the allowance of hay for twenty four hours did not exceed eight pounds at any time of the year. In some stables the allowance, or rather the consumption of hay, will be three times that quantity.—When a horse has for some time been accustomed to eat an immoderate quantity of hay, his stomach will have acquired an increased capacity or size, which probably cannot be suddenly reduced, without causing some inconvenience to the animal. I have lately, heard of a horse that consumed three hundred of hay in a week; probably one half of this was either wasted or stolen; yet the proprietor had no suspicion of this being the case; but even supposing that one half only of the quantity was eaten by the horse, it would amount exactly to double the quantity I have set down as a full allowance; that is, twelve pounds in twenty-four hours. This is the barrack allowance to troop-horses, and is always found sufficient.

(To be continued.)

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FLAX.

Different opinions are held with respect to the period most proper for pulling flax.—Generally speaking, it is thought the safest course to take it a little earlier, any thing lost in quantity being in this way made up by superiority of quality; besides when pulled green, flax is not a scourge, though this has often been made an objection to its culture.—When suffered to ripen its seed sufficiently, flax is certainly a severe crop, though not much more so than rye-grass, when allowed to stand till the seed is perfectly ripened.—But there is no occasion for allowing any great breadth of flax to remain for seed, so that little injury need be sustained from this cause. Were flax for seed only sown on particular soils, for example, on newly broken up moors, no detriment would follow; because these soils are fresh, and, in the first instance, will produce excellent seed, even of superior quality to what can be raised on land of three times the value, if under corn culture.

The flax culture is attended with many difficulties. The necessary operations, from the sowing to the market, are, perhaps, inconsistent with the farmer's ordinary occupations, and it might be desirable to divide the labour, and to separate the raising of flax from the culture of other crops. The farmer may sow the land, but there his labours ought to cease. The assistance of another person ought then to be employed, and the processes of pulling, watering, &c. be executed under his management. This, we believe, is the Dutch method, and unless some system of this kind be adopted, flax husbandry will never approach that degree of perfection of which it is capable.

Some years ago, this article was extensively raised in some places, merely for the seed.—It was sown upon fresh moors, and a handsome return was generally received from land comparatively of little value. The zeal, however, of those who adopted this plan was damped by the difficulty of finding purchasers. Seed, however, was raised of a quality equal, if not superior to that imported from Holland, but the prejudice in favour of foreign s
must be removed, before that raised at h
can find a ready market. That a partia
newal of seed may be necessary, will n
disputed; but that it ought to be impo
every year, seems highly absurd. Some
mers have sown flaxseed raised on their
land for ten successive years, without per
ing any degeneracy. The money which i
nually sent out of the country for imp
seed, might surely be applied to a better
pose.

ON POTATOES.

(From the Irish Farmers' Journal.)

Notwithstanding all that has been w
and said upon the subject of potato cultiva
the system seems to admit of much imp
ment, or rather indeed appears to be in a
of infancy, if we consider the imperfe
of that vegetable, the improvements an
coveries that are every day teeming fr
man research, and falling under the contro
and management of man.

Certainly experiments are not the immediate province of farmers, who have to meet the landlord, and to encounter the vicissitudes of seasons, and only strive to make the most of their farm by known practice or ancient usages, however imperfect they may be—because experiments very often prove abortive in the hands of husbandmen, owing to the want of science, and very often to the want of means. It, therefore, becomes an imperative duty for the landed interest to look narrowly into the present practices of their farming tenantry, and to set on foot those necessary researches, and, by experiments founded upon the most probable theories that are set forth in farming communications, accomplish if possible, results that would benefit not only the present, but perhaps generations yet unborn.

The culture of potatoes, however simple in practical appearance, by improved modes of management may probably be brought to a state of perfection with regard to flavour, taste, and produce, which has hitherto baffled the most skilful agriculturists to obtain; for if we set up a comparison between corn and potatoes, it will appear that a default in quality is much greater in the latter than in the [illegible]mer, because corn may fail in quantity, but [illegible] in general retain its taste and flavour, with [illegible] exceptions which arise from wet wea[illegible] alone. But potatoes are so essentially [illegible]rent, and so subject to a change of taste, [illegible]tity and variety in their species, that it is [illegible]nable to suppose there are methods with[illegible] [illegible]e reach of science for improving the qua[illegible] [illegible] and correcting the faults of this impor[illegible]production.

[illegible] the first place it seems to be the proper[illegible] [illegible] the potato to require equal parts of [illegible]ure, cold, and heat, as an extreme of [illegible] will prove fatal; but as these depend [illegible] natural principles, they cannot be coun[illegible]ed by human means, further than by such [illegible]gement as may tend to oppose the ri[illegible]of those elements in northern parallels, [illegible] too often destroy the hopes of the far[illegible] [illegible] the potato would carry with it its bad [illegible]ies through every stage of management, [illegible]rough soils of every sort, we might then [illegible]r of improvement; but as that is not the case, potato culture, brought under the laws of science, may banish its defects, and render it a more palatable and nutritious food than it has hitherto been.

As potatoes are tedious and expensive to manage, a failure must be a heart-breaking circumstance. Therefore the farmer, previous to the undertaking, should look well to the state of his land, to the choice of his seed, to the mode of planting, and to the after management of the whole; under these circumstances, potato crops very often defy adverse seasons, and many farmers have been most amply remunerated by such judicious management. Now as good seed is an object of the first consideration, those of foreign growth will always be superior to seed of home produce, and would, if convenient to the farmer, amply compensate for extra expense in a change of seed, because potatoes degenerate, and should be renewed when any decline is perceived in the growth or quality of the crop; but as this may be inconvenient, they may be improved for the purpose of seed by planting a piece of lea in ridges, every year, and if the ground be inclined to a moor, the better the seed will be. Therefore, by this simple mode, good seed may be obtained and kept up for many years. And as worms are most destructive, and worm-eaten potatoes are very unprofitable and disgusting, a thin sprinkling of slaked lime on the ridge or drill, previous to laying down the seed, is the best remedy—a very small quantity is sufficient for an acre, and the flavour of the potato is also much improved. So simple a remedy should not be neglected; for it is well known that potato crops in many farms have been so preyed upon by worms, as to be only fit food for pigs and cattle.—Moor lands are generally exempt from worms, so are lands which are pared and burned, old strong lea grounds are also less subject to the evil than worn out lands, or those that are constantly disturbed; but in all cases a small quantity of lime, as before mentioned, will effect an improvement worthy of agricultural notice.

Early crops in all soils have the best chance of escaping those mischievous enemies; but late crops generally suffer, as it is necessary to leave them in the ground until late in the season to attain maturity.

In cutting potatoes for seed, a top cut will sprout and have its produce in much less time than a cut near the root. Therefore to have an early, even crop, separate the top cuts from the bottom ones, and use them for seed.

M. G.

FALLOWING OF LAND.

It has been lately observed, that "when land of a dry gravelly quality gets foul, it may easily be cleaned without a plain summer fallow: as crops, such as turnips, &c. may be substituted in its place, which when drilled at proper intervals, admit of being ploughed as often as necessary—whereas wet soils, which are naturally unfit for carrying such crops, must be cleaned and brought into good order by frequent ploughings and harrowings during the summer months." Indeed it is strenuously contended, that the most judicious intermixture of crops upon clay soils will not preclude the necessity of a summer fallow; though it may go a great way in preventing the necessity of its being so frequently repeated. But another writer, whose experience has been considerable, while he allows that there is no question at all of the merit of fallowing when compared with bad courses of crops, and who thinks that, if the husbandry is not correct in this respect, the fallowist will certainly be a much better farmer than his neighbours, contends that there are courses which will clean the foulest land as well as any summer fallow, by means of the plants which admit all the tillage of such a fallow. "Cabbages," says he, "are not planted before June or July—winter tares admit of three months tillage, if tillage be wanted.—Beans, well cultivated, will preserve lands clean, which have been cleaned by cabbages; and in any case two successive hoeing crops are," he thinks, "effective in giving positive cleanliness."

There are probably, however, many situations of clayey soils so exceedingly stiff and wet, that though turnips, cabbage, or bean crops may be grown upon them, it cannot, from the great labour and difficulty of their preparation, and the high degree of injury that must be done in the eating or carrying them off the land, be to much advantage, or such as to admit of that sort of culture during their growth that will keep the ground perfectly clean from weeds. In such cases, no course of cropping, however judicious, can probably be effectual in this respect; it is indeed well known to such practical farmers as have had the management of soils of this nature, that it is scarcely possible to be effected even by summer fallowing itself. It has also been justly observed, that soils of this description are so frequently from necessity ploughed over when wet, that an adhesion and sourness is produced that cannot be removed without exposure to the heat of the summer's sun, and the pulverization afforded by the repeated operations of the plough and harrow. There is no sort of crop that can in such cases supply the place of fallow, as turnips are highly detrimental; and drilled beans, though they may answer in the way of an assistant to fallow, and have the tendency of keeping lands clean that are already in a proper condition, it is supposed, from the necessity there is of sowing them early, can never be beneficially substituted for the radical improvement that is produced by a clean summer fallow.

But even if such sorts of land could be kept perfectly clean and free from weeds by the judicious interposition of beans, cabbage, or other similar crops that might be cultivated on them, it is evident that the various beneficial products which have been mentioned, and which are the result, in a great measure, of the perfect pulverization and high degree of aëration that are produced by means of summer fallowing, could never be formed in such an abundant manner as to be of much utility in aiding the growth of crops. Nor could they be in so suitable a condition for the admission and extension of the absorbent roots of the plants that may be cultivated upon them.

Yet though these circumstances may demonstrate the practice of fallowing to be occasionally necessary, and highly useful, on such wet, adhesive, clayey soils; as the proper and most advantageous quantity of stock for the improvement of such farms can seldom be kept where it greatly prevails, the repetition of the practice should, in this view, be prevented as much as possible, by the cultivation and growth of green crops as often as the lands may be in a state fit for them, and they can be had recourse to with any chance of success. The ruta baga, or Swedish turnips, as being a plant somewhat more adapted to wet, stiff soils, than either the common cabbage or turnip, might probably in such cases be advantageously substituted as a green crop, and, by being eaten off in the spring months, when the ground became sufficiently dry to bear the cattle or sheep without injury, admit of a pea crop; after which the land would probably be a in suitable condition for wheat; or a crop of clover might be taken and then wheat. But in all such cases much must depend upon the degree of cleanness, pulverization, and aëration, that has been accomplished by the occasional use of summer fallowing.

There is much variety in the conditions of such soils as may occasionally require the aid of naked or summer fallowing, in order to render them suitable for the growth of clean grain or other crops; some, from the nature of their situation and the sub-soils on which they are placed, being more inclined to the retention of injurious moisture or wetness than others, consequently more disposed to be cold, and to the throwing up of large crops of weeds; while others, from the large proportion of clayey or tenacious loamy materials that may be mixed and incoporated with the pebbly or other ingredients, may be more stiff and retentive, and of course more difficult or more incapable of sufficient pulverization, and of admitting the roots of such plants as are capable of being cultivated upon them, to readily establish themselves and draw from them proper supplies of nourishment.

In regard to the method of performing the the operation, it should always, like most other processes in husbandry, be conducted with a due attention to the circumstances and qualities of the soil, as more pulverization or breaking down will evidently be required where the land approaches to the nature of a perfect clay, than where it has more of the loamy quality, and where the retention of moisture is considerable, more regard will be necessary to the destruction of weeds, than where there is a greater tendency to dryness. In most cases where the practice of naked fallowing is thought necessary to be performed, the most general method of proceeding is, for the land to be first ploughed up in autumn, a second time after the barley seed season is finished, and two or three times or oftener afterwards, as circumstances may render necessary; the ground being well broken and reduced by means of harrowing in the intervals of the different ploughings. It has likewise been long since judiciously recommended, both in the preparation of lands by winter fallowing for barley crops, and summer fallowing for those of wheat, that when it is first ploughed up after the harvest is over (which should always be done as deep as possible) no time should be lost in rendering the new-turned up soil as fine as possible by harrowing: as repeated trials and attentive observation have fully shewn, that such lands as are made fine before the sharp frost and winter rains come on, receive a much larger share of their influence than any others; but that if the land be left in a rough state, there is seldom time for the rains and frost to penetrate or affect more than merely the outside of the large clods or lumps that are present. The outside may thus, indeed, be pulverized; but the middle of the lumps, wherever they are large, is found nearly in the same hard, stiff state, as when turned up by the plough. Hence it is evident that the benefit of the air, winter rains, and frosts, on lands thus left, must be only partial: and of course the harrowing it in the spring, especially when the latter of these are over, is too late for its receiving the full benefits which might otherwise have accrued from them, and the power of promoting vegetation not being nearly so great. Therefore, to make winter fallows as fine as possible in autumn, and then ridge them up in that pulverized state, is acting most agreeably to nature; the greatest possible quantity of surface being thereby exposed to the atmosphere, and the land left in the state wherein the rains and frosts are most easily admissible; they are consequently more capable of penetrating and enriching the whole mass to a much greater extent. By this means, too, a larger proportion of atmospheric air is involved and incorporated with the mould, and of course a more perfect degree of aëration effected.—There cannot be much doubt, but that by well reducing such stiff, adhesive soils as require fallowing, on their being first ploughed up, great advantages in the way of pulverization may be accomplished, as in the spring and summer months they are apt to cake, and become so hard and lumpy as to be wrought with difficulty. In order to fully ascertain the utility of this method of preparing fallows, one half of a field of ten acres was left as nearly of an equal quality as possible, in the rough state after ploughing; while the other was made very fine, by harrowing and beating in pieces any large hard clods which the harrows could not reduce. In the following spring it was observed, that that part which had been harrowed was much finer without any additional working, than the other could be rendered by repeated harrowings.

It is therefore evident, that upon some sorts of stiff, clayey soils, where fallowing becomes necessary, the first ploughings should be given if possible before the commencement of the winter season, and that they should also be well reduced by means of harrowing, in order to promote the decay of such vegetable matters as may be upon the surface of the land, as well as to produce a more complete state of pulverization, and aëration of the soil. This is often most usefully performed by gathering up the ridges; as in that way the ground is not only laid more dry, but the furrows more effectually opened for the draining off of the injurious moisture. In the second ploughing in the spring, which is generally before the cross-ploughing is given, these ridges ought to be cloven or turned back again, and, after lying a suitable length of time, be well harrowed for several times, and occasionally rolled, that sufficient opportunity may be given to collect and remove every sort of weed that may be brought up to the surface. After this business has been properly performed, the land may again be ridged up by means of the plough; by which it is rendered less affected by wetness, and the portions of soil that had not been touched in the cross-ploughing stirred. In this way a perfectly clean fallow may soon be procured; it has, however, been maintained by some writers who have had much opportunity in examining the matter, that ploughing only is necessary; the collecting the roots of the weeds and removing them being useless and improper. But in the stiffer sorts of clayey, wet soils, where we have conceived the fallowing system to be chiefly occasionally necessary, it is almost impossible to get perfectly clear of different sorts of root-weeds in this way, from the cloddy manner in which such lands break up in the operation of the different ploughings, the earthy lumps often containing many that are not in the least degree injured in their power of taking root, by the heat to which they may have been exposed in such ploughings. In these cases, they can only perhaps be effectually eradicated and destroyed by the high degree of pulverization that may be accomplished by means of frequent harrowing and rollings; the weeds being afterwards carefully removed by the hand.

In Norfolk they occasionally make what is called a *bastard summer till.* If a piece of land, from which they have mown a crop of clover or any artificial grass, appears to be not sufficiently clean for the ensuing wheat crops, they plough it twice, and, if there is time, thrice before harvest, using freely both the roller (if it is necesary) and the harrow. They sometimes even make a *bastard* summer till of a pea stubble, for the purpose of cleaning it. As soon as the peas are off the land, which oftentimes happens four or five days, and sometimes a week, before the harvestmen are taken home, they harrow the haulm up and cart it off; plough the land once immediately, and let it lie till harvest is over; then give it two cross ploughings, and a fourth preparatory for seed, which however, is oftentimes ploughed in with the last earth.

In cases where manure is necessary to be applied to land after it has been prepared by the process of summer fallowing, it should be done according to the nature of the manure and the circumstances of land in respect to richness and the state of its tillage. Lime or marl is generally laid on with the greatest benefit during the summer months, as about the middle of July or the beginning of August; in which cases it should be spread out as equally as possible over the land, and ploughed in with a very slight furrow, so as only just to mix and incorporate it with the mould; as by this means, where farm-yard manure is applied at the time the seed furrows is given, in a similar manner, the calcareous and vegetable manures, by being thus more uniformly blended with the soil, as well as by their more extensive operation on each other, afford more abundant and regular supplies of nourishment to the crops during the first stages of their growth, and a degree of heat may be generated that is highly favourable to such states of vegetation. That some advantage is afforded in this way is evident, from the rapid growth and great verdure that generally takes place where fallows have been managed in this manner.

From the Irish Farmers' Journal.

Sir—In a former letter on the woollen manufacture, I recommended the introduction of carding machines of a moderate size, to prepare the rolls of wool from whence yarn might be spun at home, by means of the long wheel. This measure alone, without any improvement in the machinery appropriated to spinning, would be sufficient to give much increase of employment to our peasantry. In Saxony, wool is universally spun by hand, and in New England, I apprehend, generally. Good mechanists assure me that hand-spun yarn is softer, and when wove felts better in the fulling mill than mill-spun yarn; yet, for some species of goods which do not require fulling, the mill-spun yarn may answer well.

I now, therefore, proceed to show how spinning machines, having much of the advantage of the best modern improvements, may be adapted to the convenience of the Irish peasant.

Machines are valuable by affording a cheaper means of producing a particular fabric than we had before; but the choice of the cheapest means must vary with the circumstances of society. The spinning machinery which has been introduced into England has been calculated to save time in producing yarn at the expense of considerable sums of money, in first cost and repairs—for in England time is precious and money is plenty. In Ireland the reverse is true—time is cheap and money is scarce, of course a spinning machine on the best possible construction for England could not be on the best for Ireland, where the object to be obtained is so different. The spinning-jennies in England are often very large, containing several hundred spindles—for the Irish cabins I would propose to have them made, containing from six to twelve. In the English machines the spindles stand at the distance of 2½ inches, which gives room to collect a considerable quantity of yarn on each—-for the Irish cabin they should stand at the distance of 2 inches only, or less. Such a machine will be smaller and cheaper than if a mere copy of the English, and if the copps (collection of yarn on the spindles) require to be more frequently removed, the loss of time to the Irish peasant is not of so much consequence.

We have hitherto supposed what has been done in England in the woollen manufacture has been rightly done, and this is a species of error to which we are very liable in Ireland. Some years ago the materials were worked up in the house of the workers, and taken up by the manufacturer. It is asserted by good judges that the people were happier under this system than since they have been collected into large manufactories—they must have had better health. As to morals there is a difficulty on the threshold, when we approach that subject. It is the general impression of all well-informed men, that the profligacy of the workers in the great English manufactories, is such as ought not to be detailed in print. Happiness, health, and morals of the workers are of value; so that this is our situation, we have not money to buy English cloth—if we cannot clothe ourselves we must continue in rags, if we manufacture in large factories, our people will be as profligate as the English mill-spinners—our resource is to introduce small, cheap, but efficient spinning machinery to the cottiers' fireside, where the young people who work it may remain under the wholesome control of their parents.

I am, Sir, your friend and humble servant,

WHITLEY STOKES.

16, Harcourt-street, Dublin.

EXTRACTS FROM WHITE'S FARRIERY.

(Continued from page 256.)

The window of the stable should be at the south-east end, and the door at the opposite end. The window should be as high as the ceiling will admit of, and in size proportioned to that of the stable. In one of twelve feet high, it need not come down more than four feet, and will then be eight feet from the ground, and out of the way of being broken. The frame of the window should be moveable upon a pivot in the centre and opened by means of a cord running over a pulley in the ceiling, and fastened by means of another cord. With a window of this kind, in a stable of three or four horses, no other ventilation will be required: a person never need be solicitous about finding openings for the air to enter when there is sufficient room above, and means for it to escape. Where much light is admitted, the walls of a stable should not be white, but of a stucco or lead colour, and better if painted, for then they may always be washed clean with soap and water, as well as the stalls, rack, and manger; and this should be done once in two or three weeks, or a month at furthest. If the walls are boarded up to the height of about five feet, and this, as well as the stalls, painted of a light wainscot colour, it will look extremely neat, and the under part of the wall will be kept drier, and look more comfortable. A stable should be lighted by means of an Argand lamp suspended from the ceiling, and moveable. This will give a far better light, is cheaper, and more secure than any other contrivance whatever, except gas-light, and, if properly trimmed, will burn without a particle of smoke. Instead of having a large corn chest in the stable, a handsome seat may be made at the back of the stable extending as far as may be necessary: in this there may be partitions to separate the beans, or the bran, and places may be made to rest the arms upon, so that a gentleman may sit down, comfortably in his stable and see his horses taken care of. A stable thus constructed will be found conducive to the health and the comfort of horses, and will afford an inducement to the groom to attend to every little circumstance which may contribute to cleanliness. He will not allow the smallest bit of dung to remain swept up at one end of the stable, as it commonly is. The pails should be kept outside, and not standing about the stable, as they commonly are. If it is necessary to take off the chill from water, it is much better, and more easily done, by the addition of a little hot water, than by suffering it to stand in the stable; and while the horses are at exercise, the litter should be all turned out to dry, and the brick floor well washed or swept out. A little fresh straw may then be placed for the horses to stale upon. Litter thus dried during the day will serve again as well as fresh straw for the bottom of the bed, and perfectly free from smell. The litter necessary to be kept under a horse that he may stale with comfort, and without splashing himself, is not considerable, and may be changed once a day. A great saving may be made in litter by turning it out, and drying it as I have described; and if a shed were built adjoining a stable, it may be done at all times, and may serve also to exercise and clean a horse in wet weather.

Neither dogs, fowls, nor goats, should ever be permitted to enter a stable,* and dung should be kept at a distance from it. In speaking of the arrangements of the stable, it may not be amiss to notice what I consider a good contrivance in cleaning horses, that is, to have two straps, one on each side the stall, about one yard from the head of it. By these the horse may be fastened during the time he is cleaned, by which he will be effectually prevented from biting the manger or the groom; and being kept back in the stall, the groom will be better able to clean the front of his fore legs, chest, and neck, and be able to move round him; this is better than strapping him to the rack. When the common rack and manger are preferred, the rack staves should be straight, and brought nearly down to the manger, and this may easily be done without the necessity of a hay-loft, and the manger may be made deep and wide as I have described it.

CHAPTER II.—FEEDING.

The best food for horses is oats and hay; but it is of importance that such only should be given as are of the best quality. Oats that are musty, or that have any degree of bad smell, are not eaten with that relish that good sweet oats are; therefore they are not so perfectly digested, nor is the chyle that is formed from them so pure: hence arise indigestion, foulness of blood, looseness of the bowels, and general debility. This is more especially the consequence when the hay also is bad. I have known a serious loss sustained by a proprietor of post and coach horses, from keeping a considerable stock of oats, and neglecting to turn them. Many horses became glandered and farcied apparently in consequence of this circumstance. Beans, when broken or bruised, may be an useful article of diet, joined with oats, for horses whose work is constant and hard; but still I think this rather doubtful, and am inclined to believe that really good oats is as good a diet as a hard working horse can have. Some horses, it is said, do not eat bruised oats with an appetite; in that case it is probable they do not digest quite so readily as those which are not bruised. But when we consider that there is often a defect in the grinders, which causes a horse to masticate slowly and imperfectly; that horses have sometimes a voracious appetite, and swallow a considerable part of their corn without chewing it; and as corn that is swallowed unbroken is known to be indigestible; the bruising of oats must be considered as a matter of great importance, and may be the means of saving a considerable quantity of this article. Another circumstance to be considered is, that when oats are taken into the stomach unbroken, being indigestible, they cause a great deal of useless exertion of the stomach in endeavouring to digest them. This exertion is not only useless, but very injurious, gradually weakening that important organ, and laying a foundation for many diseases, especially that named flatulent colic, or gripes.

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* When a horse that has been accustomed to company is taken to a situation where only one horse is kept, the society of a goat may contribute to his confort, and make him more cheerful than he would otherwise be; and cheerfulness is certainly conducive to health.

It is generally thought, and I have been of the same opinion, that chaff, especially of clover, is an useful addition to oats, in causing them to be perfectly masticated. It is also thought, that if the horse's hay were given principally, or even wholly in the form of chaff, it would be the means of a great saving of hay, as well as of insuring a perfect mastication of the oats. There are circumstances to be considered, however, which may make rather against this opinion. Horses certainly prefer eating hay from the rack: and when it is good, and given four times a day in small quantities, the horse will eat his allowance with avidity, or with that appetite which will insure a perfect digestion and assimilation of the food, and so will it be with oats when they are good, cleanly sifted, and given in small portions at a time; and if spread thinly on the bottom of a wide manger there will be no danger of his eating them too greedily. If he has any sharp edges in his grinders which prevent him from masticating properly, they must be rasped or filed, as will be described hereafter. Oats thus given, and not in excess, but duly proportioned to the horse's work, will be perfectly masticated, digested, and assimilated; the chyle formed from such a diet, and so dispensed, will be pure, and consequently the blood will be so also. Now let us contrast with this simple, wholesome, and economical mode of feeding, that which is commonly adopted. The hay, in the first place, is either of indifferent or bad quality, and given in unlimited quantity. The oats are generally, perhaps, tolerably good; but sometimes they are indifferent, or even musty and unwholesome; they are dispensed irregularly, and often in too large quantities at a time, and so thrown into the manger that a horse may easily fill his mouth, and in such a way, that he must of necessity swallow some of them unmasticated or unbroken. This is more especially the case when two or more horses are feeding together without a separation; each of them is eager to finish his allowance as quickly as possible, in order to rob his neighbour; and in doing this, however perfect his teeth may be, he cannot avoid swallowing some of his corn without chewing it.

In the usual way of feeding and treating horses, no attention is paid to the state of the stomach when they are put to work, but frequently they are put into a chaise, or coach, or ridden off at a quick rate with their stomachs loaded with food; the consequence of this has often been gripes, inflammation of the bowels, and even sudden death. In the simple and ecomical mode of feeding I recommend, the horse is always ready for his work, digestion goes on rapidly, every particle of nutriment that is contained in the food is extracted by the stomach without any injurious exertion, and is converted into pure blood. But when the stomach is loaded, as in the other case, even with good food, digestion is always imperfect, and performed with difficulty; and when the hay, as it often is, is bad, the consequence is still worse. The stomach, by such management, is sure to become in time more or less diseased; and when this happens, a foundation is laid for many diseases.

(To be continued.)

NORTH WEST SOCIETY.

The General Meeting of the Committee will take place at the King's Arms, Londonderry, on Tuesday the 13th July, at twelve o'clock.

By order,

July, 1824. W. MARSHALL. Sec.

CURRENT PRICES IN DERRY.

Oatmeal,	...	15	0	*to*	16	0	*per cwt of* 120*lb.*
Oats,	...	0	11	–	1	0	*per stone.*
Barley,	...	1	0	–	1	4	
Potatoes,	...	0	4	–	0	5	
Beef,	...	0	5	–	0	7	*per pound.*
Mutton,	...	0	4	–	0	7	
Veal,	...	0	6	–	0	10	
Butter,	...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax,		45	0	–	56	0	*per cwt. undressed.*
Five hank yarn		2	8	-	3	2	*per spangle.*
Four, do. do.		2	6	-	2	9	
Three, do. do.		2	5	-	2	10	
One, do. do.		2	0	-	2	6	
Coarse Bagging,		2	6	-	3	0	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. Presdent,
Londonderry.

Printed for the N. W. of Ireland Society by MOSS. HEMPTON, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. II.—NO. 34. WEDNESDAY, 14th JULY, 1824. Price 2d.

Doctor Anderson is a well known writer of great ability and experience in agricultural affairs; we have occasionally made use of the valuable information presented to the world in his works. In the year 1800, a project for establishing a national experimental farm was in contemplation, on which subject the Dr. drew up the remarks to which we solicit the attention of the N. W. Society.—In making these extracts a liberty has been taken of curtailing and selecting in such a way as appeared suitable to the nature of this publication. Our object is to shew the importance of *accurate experiments* in farming, an art confessedly so difficult and complicated, and also the necessity of a systematic arrangement of detached experiments, in order that agriculture may be carried to the highest perfection.

There are three things (according to the Doctor) which demand the attention of the farmer. 1st—The culture of particular crops, the melioration of particular soils, and the rearing of particular animals. This may be called the *practical* department.

2d—The distribution of labour, so as to diminish expense, to perfect as well as to facilitate every operation, and to convert the products of the farm to the most beneficial purpose. This may be called the *economical* department.

3d—The selection of those objects for cultivating and rearing, that will, in every case and variety of circumstances, turn out the most profitable to the farmer, and beneficial to the public. This may be called the *physical* department.

Before agriculture can be carried to its highest degree of perfection, every particular respecting each of these three departments must be fully known. This degree of perfection, however, no man can seriously hope ever to see attained—yet something is already known in each of these departments. The question at present before us is—what measures are most likely to promote the attainment of knowledge in each of these departments, and towards which an experimental farm, if it can be established, ought to be chiefly directed? For although it is impossible in practice to keep these three departments completely distinct, yet it will be found if improvements in one of these classes be our principal object, the mode of procedure must be very different from that which would be required, if the inquiries were chiefly confined to another department; and it is of much importance that such a plan only should be adopted as the nature of the institution shall be best calculated to effect. To enable the public mind to form a decisive judgment in this particular, is the object of Doctor Anderson's remarks.

No branch of agriculture, says our author, has been so much adverted to, or has been carried to such perfection by practical farmers, as that which I have first mentioned, and which, on that account, I have called the *practical* department. Indeed, the business of the farmer from the beginning of the world till the present time has been little else than a series of detached experiments, on the best mode of cultivating the particular crops which have attracted the farmer's notice, on the description of soil which he possesses, and under the influence of that climate in which he lives; or of rearing such animals as had come within his reach, upon the food he has been able to provide for them. In this way he has made a greater diversity of experiments than could be made on any farm that might be established at the public expense in a thousand years. These experiments, too, have been so often repeated by individuals under all diversities of seasons and climates, as to give a body of useful inductions to practical farmers that could not otherwise have ever been attained.

What is chiefly wanted in this department is, not so much to make new experiments, as to collect and arrange those that have already been made by the most judicious practical farmers every where; and by comparing these, and adverting to the variations in respect to soil, climate, and other circumstances, to collect a body of practical directions which could not fail to prove of great national utility, were these directions to be so printed as to fall within the reach of practical farmers.[†] For the circumstance that has hitherto retarded the progress of agriculture under this department, is not so much the want of knowledge in it, as the difficulty of diffusing that knowledge among the persons to whom it could prove useful. A farmer is necessarily confined to a narrow spot, without knowing that a practice, perhaps much better than his own, has been long pursued in another district. His views are limited, too, in regard to the objects that he might successfully rear or cultivate, in regard to all which particulars he might be instructed by means of a publication of the nature here hinted at, especially if accompanied by a few lucid experiments on certain subjects, to which we shall advert more particularly hereafter.

With regard to the second head, which has been styled the *economical* department of agriculture, it falls so peculiarly within the province of the practical farmer, and it seems to be impossible to carry it to any degree of perfection by any other stimulus than the hope of gain to be realized by personal exertion, that I consider every experimental institution that could be formed by a society with this view, as altogether chimerical. It is a branch of agriculture, however, which may be considered as yet in its infant state.—When landed gentlemen shall become so far enlightened as to see how much their own interest might be promoted by a liberal policy to their tenants, they would then see a progress in agricultural exertions that would astonish them, not less by the generous independence of mind it would inspire in the tenants, than by the liberal supplies with which their own coffers would be filled without any painful effort on their part to effect it.

It remains, then, that an experimental farm ought to be chiefly appropriated to the elucidation of questions referable to the third class above enumerated—namely, the selection of those objects for cultivating or rearing, that will, in every case and variety of circumstances, turn out the most profitable to the farmer—which is what I denominate the *physical* department. Indeed, these investigations are of a nature so intricate, and require such a painful attention, and such a discrimination of circumstances before truth can be attained, as to render it impossible for any individual, in the ordinary pursuit of business, to attempt the enterprise with a reasonable hope of success. The expense, too, that must be incurred for procuring the aid of talents capable of directing these investigations, and the hands necessary for executing them with propriety, are such as cannot come within the reach of mere practical farmers; and were that expense to be incurred by a man of high rank, who was incapable of judging accurately in this respect for himself, he would find it so impossible to guard against the impositions of plausible, designing men, that his money would be worse than thrown away, as it might be perverted for the dissemination of error by means of inaccurate experiments, instead of the establishment of truth. Hence it is, that though there are innumerable facts of the utmost importance under this head, which must be clearly ascertained before we can advance a single step with certainty, yet there is not the smallest prospect that ever these facts can be ascertained, unless it shall be done under the influence of an institution such as is now proposed. And as it is of the utmost importance that the plan should be well digested at the commencement of the undertaking, and the principles upon which it rests thoroughly understood, so as to admit of its being afterwards prosecuted in a steady and consistent manner, it is necessary that these principles should now be developed with the utmost precision, that they may be submitted to the subscribers for their consideration, before any expense shall have been incurred.

The practical farmer, considered in this point of view, may be compared to an artist, who is furnished with a certain number of materials on which he may work, and of which he is to make the best use he can. If the materials given him be of a worse kind than others he might have had, his work must be imperfect—or if the tools employed, or the process pursued be rude and awkward, his work will be defective and expensive, compared to what it might have been. If this man shall be obliged to go in quest of raw materials to work upon, instead of taking those which are brought to his hand, he must not only desert his own business for the time, and thus hurt his family, but he may be also greatly imposed upon in regard to those new materials. Hence it will happen that a cautious man in this profession ever must, and ought to be extremely shy to depart from the path he knows, and to deviate into those which, though alluring, may in the end lead him into distressing embarrassments. Are such men, under these circumstances, to be blamed for acting with caution? or do they act unwisely if they insist that before they adopt any new thing, it shall first be proved by the most decisive experiments, that they cannot possibly be mistaken in regard to the practice or fact in question? Where, I ask, are such experiments to be found?

[†] This is an objection to Sir J. Sinclair's excellent work on the Husbandry of Scotland. Farmers' Journals, Magazines, &c. answer the Doctor's views in some measure at least.

One of the first objects that occurs to an attentive farmer is, the importance of ascertaining, with the greatest precision, what are the particular crops which will procure him the greatest possible profit, and the individual animals which it would be most beneficial for him to sustain on his farm, all circumstances of situation, climate, capital, &c. being duly considered. No sooner does he enter into particulars in this department, than he finds, that instead of the *certainty* he wishes for, he meets with nothing but conjectures and opinions, which leave him in doubt and uncertainty, to which point soever he turns himself.

Wheat, we shall suppose, is the first crop that attracts his notice, in regard to which he finds that there are two or three kinds usually cultivated in his neighbourhood, and that some men prefer one kind and some another, without his being able to discover one undeniable fact upon which these different opinions are founded. That one sort has sometimes yielded a greater crop than another on certain soils, in particular seasons, he finds little reason to doubt; but the precise circumstances which occasion these variations, or their amount, he in vain attempts to learn; in short it is not known. He has heard also, that there are many other varieties of wheat which he has never seen, and which, most probably, have each of them some distinctive qualities, that might make them more or less eligible in particular circumstances, were those distinctive qualities precisely ascertained—but this he finds has not only not been done, but, from the difficulty of the subject to practical

ed the possible advantages which might result from such an inquiry. The same thing might be said of the varieties of barley, rye, oats, pease, beans, and every other crop which is cultivated. To remove the suspicion of unnecessary refinement, it is necessary for me to adduce some well authenticated facts under this head, which will establish the utility, if not the necessity of a particular investigation of the objects belonging to this class.

No particular crop has attracted so much of the attention of farmers in Scotland, as *oats.* Oatmeal is the food of the greater part of the inhabitants of that country; and the oat can be made to grow on perhaps a greater diversity of soils, (especially if newly reclaimed) and under greater varieties as to climate, soil, culture, and other circumstances, than any other crop whatever. Of course greater occasion has been given in that country to remark the peculiarities of the different varieties of oats, when accidentally sown in the same district, in situations that proved favourable to the one, and unfavourable to the other, than has taken place with respect to any other kind of grain. Hence it has happened, that the peculiarities of some of the different kinds of oats, have been more precisely ascertained than those of other kinds of corn. Omitting other varieties, I shall instance two. One of these yields a small, thin grain, which weighs very well, and yields a good quantity of meal when thoroughly ripened; it is moderately early; it affords a long straw, moderately strong, and will yield a tolerable crop upon land of a very poor quality; but if it be sown upon rich land, it grows with so much luxuriance, as to run a great risk of lodging, and of being rotted entirely before it be ripe, in a moist season. This variety is known by the name of Blainzlie oat, from a farm of that name in Berwickshire, where it has been cultivated, without the admixture of any other sort, for time immemorial, and from whence it has been gradually diffused over most parts of Scotland.

YOUNG CORRECTOR;

The property of the Earl of Caledon,

Late the property of Mr. John Shillito, of Methley Bridge, near Pontefract, in Yorkshire,

Will cover this season at Caledon, and will be let to Mares, the property of Members of the North West Society, at One Guinea and Half-a-Crown to the Groom.—*Dated* [illegible]

(From the Scotch Magazine.)

A proposal for establishing Schools wherein practical Agriculture might be taught.

TO THE EDITOR.

Sir—I am now residing with a friend in the neighbourhood of Edinburgh, and am most forcibly struck with the careless, slovenly manner of his farm servants. This induces me to send you this letter, in hopes that some of your correspondents will point out the best mode of removing this very general complaint among agriculturists.

Farm servants are in many cases ignorant of the proper modes of performing the several operations of agriculture and the management of cattle; such as herding, driving cleaning, feeding, &c. or ploughing, sowing, harrowing, rolling, &c. and their general deportment is often careless and disgusting.—Not possessing any sense of shame, they think nothing of breaking or losing implements, destroying food, or injuring cattle; and a hundred reproofs from the master serve no end but that of irritating his own mind, and confirming his resolution of turning them off at next term time.. Thus servants pass from one master to another without gaining amendment.

There are many causes that contribute to this evil; but the principal one is the little attention masters pay to the instruction of their servants when young; or if they do in any degree, their haughty domineering manner serves only to create disgust between the parties, which can never end in advantage to either. But, in place of this, were masters patiently to instruct them in a mild conciliating way, joined at the same time with firmness and determination, convincing them it was equally for their own advantage to do things properly, &c. servants might then become expert at performing every operation, and decent and tractable in their behaviour; the great benefit of which would be felt by all parties ever afterwards.

Servants (I think) have become much worse since the size of farms have been increased; and, from the style and mode of life that farmers have now got into, few of them have such a virtuous taste as to engage in the reformation or instruction of their servants. It appears vain, therefore, to imagine that this evil will be remedied by every individual farmer instructing his own servants.—What appears to me the only probable method, would be to establish farming schools, where young people, before they commenced farm servants in general, would be taught how to perform every operation of agriculture and rural economy, the duty of servants to masters, &c.

What I call a school, might just be a farm managed by a farmer supposed to have a suitable temper, disposition, and abilities.—Such schools should be distributed here and there throughout the country, so as farmers of every description may have proper servants; and that those farmers at a distance may change, as it were, the kind of servants, if they choose, by sending to a different school (which would tend also to improve agriculture.) A committee of subscribers should be appointed to establish these schools, direct their general management, and inspect them annually. When in the field, they might perform every operation in agriculture, and answer many questions respecting cattle and other subjects to the committee. Former pupils might also attend to compete for premiums, which would keep up a proper spirit of emulation over the whole country.*

To indemnify the farmer chosen as schoolmaster for these schools, he should be allowed one or more years' service, according to the age, strength, &c. of the pupils; upon providing them with victuals during that time; or upon providing victuals and so much money for clothes, in the case of some servants who could not afford to find clothes for one year, but who might serve a longer time on that account.

Supposing these schools established, the farmers of the surrounding country should make all their servants pass through them (which would make no difference in their scarcity any more than the present mode of changing servants does); and none should hire a young man who had not previously attended these schools at least one year, and had received a certificate of his character, abilities, and natural temper, from the schoolmaster. There are many other things that will occur respecting the formation and management of these schools, which would take up too much room to mention here. I shall only observe, that the scheme, in every light I can view it, would be a great benefit to those concerned; and tend to promote agriculture, and the general benefit of the country. But I shall be glad to hear the opinion of your correspondents before I say any thing farther.—I am, Sir, yours,

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* Perhaps the best time for this inspection of the committee would be two or three weeks before harvest, when they might both mow hay and reap corn (though not ripe.)—At another time they might plough and sow, and perform every other part of operative work.

ELRONA.

ON MANGEL WURZEL.

(From the Munster Farmers' Magazine.)

Sir—When the Cork Agricultural Society signified to me (through you) a wish for information on the culture of *Mangel Wurzel*, a root to which for two seasons I had paid much attention, I was highly flattered by their call, and promised, at the end of the second year, to give them every necessary instruction.

Feeling now that I am not yet able to give them the full satisfaction I could wish, rather than wait longer, I think it better to communicate some desultory observations, that may encourage others to take up the culture of this most promising vegetable, and aid me in the pursuit of its natural history, habits, and uses.

I do not now consider myself as addressing your Society in general, or as inviting the practical agriculturist to open at once this new field, I wish to communicate with another personage scarcely yet in existence, but, without whose aid, our valuable, and interesting science will, I fear, make but a slow and uncertain progress; I mean the *experimental agriculturist*, who feels the way for himself and others, on a most diminutive scale, and under every variety of circumstances, acquiring knowledge to be afterwards made use of in extensive practice.

I have already ventured to invite one respectable member of your Society to assume this character, and when I lighten the great pressure of correspondence now upon me, shall probably again address your Society on this subject, a sort of *division of labour* perhaps more necessary in our branch than any other.

That the culture of Mangel Wurzel should be proceeded on with caution is plain from its having been introduced into this country some twenty-five or thirty years ago, tried for a few years, and then given up.

I was scarcely an agriculturist at that time, but remember well that the eulogiums lavished on this new plant, were chiefly bestowed on its *leafy produce;* certainly not of the greatest importance in this country, in the latter autumnal season, when our gramina are so luxuriant; while its real value, derived from its immense saccharine root, seemed to be held out as a secondary consideration; perhaps the abandonment of its culture at that time arose from this misdirection.

Two years ago the Marchioness of Salisbury, with whom I had the honor of being in communication on agricultural subjects, wishing to benefit her native country by the introduction of a root of which she entertained, deservedly, a very high opinion, sent me some of its seed, which I cultivated with much care, though in my absence not well seconded by my gardener.

Last year her Ladyship was so good as to repeat her present on a much greater scale; but the dreadful weather through April, May, and the first half of June, fatal to so many of our garden seeds, proved highly injurious to my Mangel Wurzel; reducing my intended crop from three acres to three roods; and by the necessary mixture of plants of different periods, to fill up vacancies, disabled me from acquiring by experience the knowledge of its proper period, which I was most anxiously seeking.

For the encouragement of *all*, I shall state such *facts* relative to the Mangel Wurzel as I myself can answer for, giving my authority for such others as were out of the reach of my own observation.

My own crop of 1810, (weighed with great care) amounted to the rate of 36 tons to the English acre.

Lady Salisbury informed me, that her's of of the same year, reached 54; and my relation, the Rev. E. Thackeray, who saw *both* crops, assured me that her Ladyship's was far superior to mine.

In 1811, my crop was so mutilated that I did not weigh, but the Marchioness writes to me that her's reached 60 tons.

I luckily had sent some of her Ladyship's seed to my intelligent friend, Mr. B. Simpson, seedsman, College-green, with whom I often communicate, and he informs me he estimated his produce at from 90 to 100 tons to the *Irish* acre, pretty much the same with Lady Salisbury's.

As to quality, I was able in 1810 to ascertain two important points, the great liking of cattle for this root, and its excellent effect upon my milk.

After having repeatedly satisfied myself on this last point, the question was tried with suspicious accuracy in my presence, repeatedly, by my respectable friends, Dr. Bruce, and Mr. Joy, of Belfast; who pronounced the Milk from Mangel Wurzel to be somewhat richer than that from Fiorin, and very far superior to that of the cows fed in the usual way.

The Scotch Committee sent over to inspect me late in October, 1811, pronounced differently; they made the Fiorin milk somewhat richer than the Mangel Wurzel, and both far superior to the milk of my cows not yet housed.

This experiment was not a fair one, as I had commenced with the shotten Mangel Wurzel, in which the effort to produce seed must have exhausted the richest and most saccharine juices of the plant.

As to the fattening powers of Mangel Wurzel, I have established them to my full satisfaction *this* winter; my people (almost as little disposed to adopt or approve novelties as John Bull himself) admitting cordially that we had never tried any species of food which had brought forward my cattle so rapidly. Perhaps it may have been prejudice, but I fancied the flavour of the meat superior, and that as Lady Salisbury had told me, it was *nicely marbled.*

It may now be expected that I shall give some instructions relative to the culture of a vegetable, in whose favour I have said so much; but I am not addressing the practical farmer, I am *conferring* with mere experimentalists, feeling their way like myself, and shall simply tell how I mean to proceed this spring.

April 10th, I shall now sow one-third of my nursery bed for transplanting; the 15th the second third; and the last, on the 20th.

What I mean to stand where sown, I shall sow in drills, April 15, and continue to sow every fifth day until May fifth.

The distances in the drills, and *between* the drills shall be twenty-two inches.

The points to which I mean chiefly to direct my attention this season; are first to find out the best seasons for sowing the *seedling* bed, and the drills which are to remain—those sown too early running to seed, those too late not having time to attain full size.

Secondly, to observe whether the undisturbed plant, or those which have been transplanted, become largest.

Thirdly, to determine, whether good deep loam, or that enriched with dung produce the finest roots; perhaps force of manure may throw the plant more into *leaf*, than *root*, or what is worse, accelerate its period of seeding.

Fourthly, to observe how Mangel Wurzel thrives in *deep*, *dry*, *peaty moor*, manured with *ashes*; I have not sandy ground, but recommend Mangel Wurzel to be tried in such.

I need scarcely say that a root which attains such a size, and is in its shape lengthy, requires deep, loamy, and dry ground; but fortunately by adopting our common potatoe culture, any ground may be made for the purpose, deep, loamy and dry; the breadth of the furrow depending on the shallowness of the soil, as the ridge is to be accumulated from it into the proper depth, with no other inconvenience than loss of ground for that crop.

Another practice adopted by us in our potato management, is most happily adapted to the Mangel Wurzel; that of saving the roots in heaps in the field; for the immensity of its crops would exceed all means of house storage.

W. RICHARDSON, D. D.

EXTRACTS FROM WHITE'S FARRIERY.

(Continued from page 264.)

Thus, besides the additional expense of this imprudent method of feeding, many disorders are engendered by it; and, I may safely add, that a horse so fed will not do his work half so well as one that is fed properly.—A horse, whose work consists in travelling a stage of twenty miles three times a week, or twelve every day, should have one peck of good oats, and never more than eight pounds of good hay in twenty four-hours.*

The hay, as well as the corn, should, if possible, be divided into four portions, and each portion, both of oats and hay, should be wetted with water: this will facilitate mastication and swallowing, and likewise digestion: a horse thus fed will so quickly digest that he will always be fit for his labour. The largest portion, both of oats and hay, should be given at night; and the next in quantity to this, early in the morning; the other two portions in the forenoon and the afternoon, or about twelve and four. But this must, of course, depend upon the kind of work a horse is employed in, and must be regulated accordingly. Horses that have been accustomed to an unlimited allowance of hay will often eat their litter when put upon a proper diet, but this must be prevented by a muzzle. It may require a little time, when a stomach has been injured in this way, to restore it again; but, by persisting in the mode of feeding I have recommended, it may almost always be accomplished. The injury done to the stomach, by the common method of feeding, and consequently to the animals health or constitution, arises from two circumstances. First, the distension of the stomach with food, and of the large bowels with excrement, impedes respiration, and debilitates the stomach, considered only as a muscular organ; for digestion, probably, is performed in the horse, not only by a juice secreted in the stomach, but also by muscular contractions. When the stomach is debilitated to a certain degree, the nutritious parts of the food are extracted with difficulty, the chyle is imperfect, and the blood, in consequence, is loaded with excrementitious matter, which is the cause of many diseases.*

CHAPTER III.

Exercise.—Training.—Exercise must be considered under two heads; first, that which is necessary to preserve the horse in health, and make him capable of ordinary exertions, or moderate work; second, that which makes him capable of extraordinary exertions, such as hunting or racing. Exercise of the last kind is commonly named training, which term, however, includes also the mode of feeding necessary to raise the muscular power to the highest degree it is capable of attaining. The horse was evidently designed for exercise, and for the use of man. His vast muscular power, and the impenetrable defence attached to his feet, were certainly not given for his own use only. If kept in a stable without exercise, his muscular power declines, his digestive organs become diseased, and so do the organs of respiration. The hoofs grow, and there is no wear; for the little that may be worn off, merely by the pressure of his own weight when standing still, is prevented by the shoes. The toe being thus elongated, the back sinews are often strained; the foot becomes hot and inflamed, its horney covering contracts; the frogs become rotten, and incapable of performing the office for which they were designed; in short, the whole body becomes diseased. Exercise then, it is evident, is essential to his health, and even existence; and every part of his structure and economy appear to demonstrate that he was intended for the service of man. His powers, however, are limited, and so should his exertions be; but it is a fact, which must be regretted by all considerate persons, that the immoderate work in which he is often employed, so far from being salutary, or proportionate to his strength, as undoubtedly it was designed by his creator that it should be, is injurious, and even destructive in a very considerable degree. And what greatly aggravates the mischief is the early and premature age at which he is commonly employed.

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* In stating eight pounds as the daily allowance of food for a saddle horse, his stomach is supposed to be in a healthy state, and not stretched by immoderate feeding. In this healthy state of the stomach the appetite is always moderate, both for hay and water. When the stomach has been accustomed to a much larger allowance, the necessary reduction in the quantity of hay should be gradual.

* We have no precise knowledge of the manner in which the food, or certain parts of it, is converted into chyle; but we suppose that the chyle, when formed, is absorbed by vessels named lacteals, which proceed from the internal surface of the bowels, and terminate in the thoracic duct. It has appeared to me that the stomach may be considered as an organ that is indued in a peculiar and especial manner with the vital principle, or nervous power which gives it a perfect control over that tendency to chemical changes or fermentation which exists in all dead vegetable matter when moistened, and placed in a suitable temperature. The previous mastication of the food, the trituration it undergoes in that process with saliva, render it fit for that process which is named digestion, and which may be nothing more than a complete extraction of the mucilaginous, saccharine, and saline matter of the food, and a perfect commixion of them, by the muscular contractions and heat of the stomach. When this has been accomplished, the digestive mass passes off from the stomach through the small intestines; and, in its passage, the nutritious parts, or chyle, are gradually absorbed. There is a further provision, however, for the perfect extraction of the nutritious matter in the *cæcum*, or blind gut, which may be considered as a second stomach. Here the food remains for some time, and, when it gets into the colon, is completely fæculent or excrementitious.

A horse should be taken out for exercise early in the morning fasting, that is, as soon as it is light, and be kept out two hours at least. Supposing the horse to have been recently taken from grass, or straw-yard, or from soiling, he should have only walking exercise for the first fortnight. While he is out, the stable should always be made perfectly clean; and, when he returns, he should have for the first week a cold mash of one quart of bruised oats, and one quarter of a peck of fresh sweet bran. When this has been eaten, he should have three pounds of good hay, perfectly free from dust, and well wetted with water; after he has consumed his hay, one gallon of water should be given. Horses that have not had their stomachs injured by injudicious feeding will seldom drink more than this quantity; but one whose digestive organs have been brought into a morbid condition, and this is often the case by bad management in regard to feeding, has generally an inordinate appetite, both for food and water, and would drink a deal more, were he allowed, than a gallon of water; but that quantity is sufficient, and should, on no account, be exceeded, whatever the thirst may appear to be, or however deficient the appetite for the hay may be; for, when that is observed, he should fast until his appetite returns. The practice of coaxing a horse to eat, when his stomach is in a morbid condition, and unfit for the reception of much food, is injudicious because it is injurious. A morbid state of the stomach is not to be corrected by tempting a horse to eat, by giving more water, or by varying the kind or form of his food; abstinence is the only remedy until an appetite for good food returns it will then be perfectly digested; and, by persisting in this treatment, the stomach will be brought to a healthy state. Two hours after he has cleared this allowance he should have two pounds of hay, wetted as before; and, two hours after he has eaten it, a similar quantity should be given, and a mash as before: this should last him till three o'clock, when a similar quantity of hay should again be given, and a gallon of water, and the same quantity of hay every two hours, until eight o'clock, when he is to be done up, as they term it, for the night, by giving him a third mash like the former, one gallon of water, and the remainder of his daily allowance of hay, which must make the whole amount to sixteen pounds.—*(To be continued.)*

NORTH WEST SOCIETY.

As it will be impossible to lay before the Committee a Communication from Mr. WARNER, relative to an offer from the *Grocers' Company*, sooner than Friday the 16th instant—the Meeting of the Committee is unavoidably deferred until that day, when a full attendance is particularly requested.

By order,

W. MARSHALL, SEC.

Londonderry, July 7, 1824.

CURRENT PRICES IN DERRY.

Oatmeal,	...	15	0	*to* 16	0	*per cwt of* 120*lb.*
Oats,	...	0	11	– 1	0	*per stone.*
Barley,	...	1	0	– 1	4	
Potatoes,	...	0	4	– 0	6	
Beef,	...	0	5	– 0	7	*per pound.*
Mutton,	...	0	4	– 0	7	
Veal,	...	0	6	– 0	10	
Butter,	...	0	8	– 0	10	*per pound of* 18 *ozs.*
Flax,		43	0	– 56	0	*per cwt. undressed.*
Five hank yarn		2	8	– 3	2	*per spangle.*
Four, do. do.		2	6	– 2	9	
Three, do. do.		2	5	– 2	10	
One, do. do.		2	0	– 2	6	
Coarse Bagging,		2	6	– 3	0	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. Presdent,
Londonderry.

Printed for the N. W. of Ireland Society by MOSS. HEMPTON, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

Vol. II.—No. 35. Wednesday, 21st July, 1824. Price 2d.

MR. OWEN'S PLANS.

For the consideration of Political Economists.

(From a Dublin Paper.)

Mr. Editor—My father has frequently stated his conviction, that the world had attained a point in civilization, where an important change in the institutions of society was equally desirable and inevitable. A principal reason for this belief he has, in general terms, stated to be deduceable from the progress of scientific improvements, and, as it appears to me, with much reason. If the following considerations on this important subject, which my father's numerous engagements prevent him from explaining to the public as fully as he wishes, should place the matter in a novel or striking point of view before any of your readers, I shall have attained the object which induced me to commit them to paper.

Let us suppose a country, the inhabitants of which existed, in tolerable comfort, by the produce of their own unassisted labour, to have discovered a nation of slaves, who existed in full health and vigour without eating or drinking, or sleeping; the end and aim of whose being was labour; who would work for any length of time, even at the most monotonous and disagreeable occupations, without becoming either impatient or fatigued; who always performed the allotted task with unwearied punctuality and undeviating steady uniformity and exactness, day by day, and week by week, and year by year, yet without promise of hire or expectation of reward; whose united efforts produced a most gigantic and overwhelming power, yet one which was never to be exerted but in their master's service and at his command, and which never injured him in any way but by the effect of accident only; amongst whom no combinations against their master could be formed, no opposition to his wishes be ever shewn, nor his right of uncontrouled direction and absolute government be ever doubted or questioned; with whom a touch was sufficient to express his wishes, and to insure their fulfilment; for whom no treatment was cruel, nor any demands on their exertion unjust or exorbitant; whose incidental infirmities could be easily and certainly cured, and whose bodies, when at last, worn out by age and incessant labour, their powers began to fail, might be taken for any purpose to which the materials which composed them were applicable; yet, withal, a race susceptible of infinite and increasing improvement, without prejudices, and capable of being moulded to any character which their master required them to assume.

Suppose, too, that millions of these slaves could be imported annually by the nation which had discovered them.

Then, let me ask, what would be the effect of such an importation? Would the discovery, in itself be a fortunate or an unfortunate one?

I reply, it would be a most fortunate and valuable discovery *in itself*; yet capable, *without a corresponding change in the institutions of the nation*, of producing infinite misery and mischief. In this way the present institutions of all civilized nations render each member of the working classes dependent for subsistence on the demand in the market for the articles, in the produce of which he may happen to be employed. Whatever, therefore, diminishes the market demand, creates misery in the same proportion.

Now the influence which the importation of such slaves would produce is two-fold. Those who employ the working classes, and, by their labour supply the market, would find themselves called upon to choose between them and the newly-imported workmen. Can we doubt what the decision must be? Is not the answer, which they, as men of business, must make to any of their former servants, who might remonstrate against a decision in favour of the slaves, evident and conclusive: "Can you exist without eating, or drinking, or sleeping? Will you work without wages, and never exhibit a sign of impatience or fatigue, however long we may wish to employ you? Will you never complain of cruelty or injustice, in whatever manner you may be treated? Even then you are inferior, as work-people, to this new race. How can we be assured that you will form no combinations against us to our injury, that you will never oppose our wishes, never dispute our authority, or question our right of government? How can we be assured, in fine, that you will give up your wishes, your feelings, your prejudices, and your interests, and become our willing slaves, as this valuable nation is? If these things are so, how can you expect to be preferred, as workmen, to them? As superintendants, we are willing and desirous to employ some of you, but in any other capacity your labour is now useless to us.

Thus, then, would the newly imported slaves become the work-people of the nation who imported them; and the two-fold influence of their importation would consist, 1st, In a vast increase of market produce, and, 2dly, In a diminished necessity for the labouring classes.

Now, certainly, *in themselves*, these effects are not calculated to produce much misery. *To have too much of every thing that is desirable, and too little to do in obtaining it*, if it be a misfortune, is one, at least, of which the working classes seldom complain, and one which does not seem necessarily allied to penury and starvation. Yet, assuredly, in countries where the market demand regulates the employment, and consequently the food which the labourer can obtain, superfluity of the objects of desire, and increased facility in producing them, do prove positive and lamentable evils.

In a nation, therefore, whose commercial arrangements were similar to ours, the importation of a multitude of slaves, possessed of the qualities I have enumerated, would be calculated, by affording extreme facility of production and increasing its wealth proportionably, to glut its markets, and to deprive its labourers of employment, and of food, because they were producing too much of every thing.

Now, I believe that a state of things, in which an increase of wealth creates poverty, and in which the facility of producing the means of subsistence exposes to starvation, cannot long continue in any nation.

And this I believe to be the present state of things in Great Britain and Ireland.

Great Britain has discovered *an innumerable nation of mechanical and chemical slaves*; which are beginning to produce almost every thing she requires. Her working classes have become superindents of mechanism, and her real wealth is increasing to an enormous extent.

If power and wealth constitute prosperity, her scientific discoveries have made her prosperous indeed. But if the effect of prosperity be to produce comfort and happiness, then has Great Britain's commercial system of arrangements (formed in a period of comparative adversity, when an increase of production was the greatest blessing, and a famine the greatest evil that could befall), not only deprived her of all the benefits of prosperity, but turned a blessing to a curse, and proved itself totally unadapted to the present state of knowledge and of sientific power. As long as the supply of our wants shall be made to depend on the artificial and fluctuating demand of the market, so long is prosperity a positive evil. If our storehouses were empty, and our markets ill supplied, then trade would flourish, employment would be procured, the workmen would receive high wages, and the very expenditure of these wages would serve to increase the general demand, and with it the means of future employment for their labour—until, alas! prosperity again approached us, until our storehouses became filled, and our markets overflowed—and then our farmers would begin to starve, and our manufacturers to become bankrupt. Some new vent is, doubtless, occasionally found, either at home or abroad, producing a temporary relief from the evils of abundance, but part of the immense amount of spare capital which at present inundates this country, is instantly employed to supply each increasing demand, and the subsequent revulsion in the market is only the more quickly and painfully felt.

If some malevolent being were to afford us the means of increasing our production, instantaneously, tenfold, on condition that the present commercial relation of demand and supply should remain unaltered, we should probably all die of want before the end of the year; for the glut on the market would be insupportable, nothing would sell for half its prime cost, and the nation would become bankrupt.

Surely we cannot long remain blind to the fact, that increasing prosperity is but increasing misery, so long as our commercial system retains its present form! *Surely it need not continue to be a condition of enjoyment, that the means of enjoyment shall not superabound!*

Yet this condition, useless as it is at all times, and ruinous, as it has proved itself, in proportion as we approach to abundance and prosperity, is virtually imposed on the enjoyment of the world, so long as men continue to buy and sell in the market against each other; or in other words, so long as the existing system of individual commercial competition exists. Could a malignant spirit have imposed a restriction more ingeniously fraught with destructive influence to society? The more rapidly we accumulate all the good things of this world around us, the more certainly do they elude our grasp! Was Tantalus more severely punished than this?

And not to want and poverty alone are the effects of this individual competition confined. I, as a merchant, wish to buy cheap, and to sell dear: but all other merchants wish me to buy dear, and to sell cheap. Is not one man's hand against every man, and every man's hand raised against him? Is it not a proof of the excellence of human nature that honest men should be found in a society with institutions such as this?

If wealth, and honesty, and benevolence and union, are desirable to be attained, do we act wisely in surrounding ourselves by circumstances so pregnant with poverty, and dishonesty, and malevolence, and dissention? Is it not possible to combine other circumstances, under which abundance shall be indeed a blessing. and where it shall become our *apparent*, as well as our real interest, to practise honesty and benevolence towards our fellow-creatures?

My father proposes to combine these circumstances in a community of persons, who shall *unite their interests*, like one large family, and produce, in the first place *for their own consumption*. They are thus entirely independent of any market, until their own wants are supplied, and scarcely any inconvenience can arise from excess of production, except that which results from want of storehouses. In such establishments, the detailed managements of which shall be shortly submitted to the public, the evident effect of each new importation of mechanical power is to diminish the necessity for labour on the part of the members, and thus to afford them a real and certain advantage. Mechanical inventions have hitherto been brought into competition with the working classes; may they not now be brought to their assistance? We have learnt how to *create* almost any amount of produce; can we not form arrangements to *distribute* and to *enjoy* it?

True it is, that the leisure time, which the employment of mechanical power would thus gradually afford to all classes, might produce injurious consequences to those whose minds were uncultivated; but this apparent disadvantage becomes the greatest of blessings, where education is made, as it will be in all the new establishments, the first and most important object of society.

I am, Sir, your obedient servant,

ROBERT DALE OWEN.

ON PLANTING.

"Were I the owner of a million of acres," says an intelligent and patriotic agriculturist, "I would not suffer one to lie unoccupied.—What would not bear corn or grass, I would plant with wood."

Planting being of such importance, were tenants allowed to have an interest in the growth of trees, and a certain proportion of each plantation made by them, to be their property at the end of a lease, or rather were a certain value allowed for it; it is highly probable that innumerable pieces of land, banks, &c. upon every farm would be immediately devoted to timber culture. It is also universally known, that such estates as have a portion of growing timber upon them when brought to sale, bring an extra price, according to the quantity and quality of the timber, not only at the time of sale, but counting on its value at a far distant period.

The encreased value of oak and other bark, is also a strong inducement to this species of improvement. In different parts of the Highlands of Scotland, the undergrowth of oak coppice-wood, principally natural, is sold every twenty or twenty-five years, at the rate of about £50 sterling per acre, the purchaser being at all expenses of cutting and carriage; and this on land fit for little other purpose.

The juices whence resin, tar, and turpentine are prepared, might be converted into a source of national wealth, the means of British industry, multiplying and diffusing comfort to the remotest corners of the country.

Abundance of wood, besides providing for our wooden walls, furnishes materials for all sorts of buildings, for enclosures, and for fuel; it affords shelter to every species of live-stock; it breaks the current of the wind, meliorates the bleakest climate, and communicates warmth and softness to the surrounding atmosphere; it produces vegetation in the surrounding fields much earlier in the spring, and causes it to continue fresh and vigorous much later in the autumn. Besides, it would be difficult to specify a single article of convenience or luxury of life to which this useful material does not contribute a liberal proportion.

Our author brings a great number of instances, to shew the profit from woods, or oak coppices and underwood. A few of these will suffice at present. In the counties of Perth and Stirling, the annual value of a Scotch acre of coppice-wood is estimated at 25s. and that on soil so poor, that for any other agricultural purpose it would not yield 6d. per acre.

Profit on Ash Trees.—It is mentioned in the Transactions of the Society of Arts, &c. vol 21, that in the vicinity of Cottage Wood, in Staffordshire, there were growing in 1807, within twenty-two yards square, as under, viz:

50	Ashes, containing	300 feet,	at 1s. 6d.	...£22	10
13	Oaks, ...	7 feet,	at 2s. 0d.	 0	14
	Bark, ...			0	6
				£23	10

Or £335 10s. per English acre.

The above is part of two acres planted in 1776, partly on heaps of earth in clay pits, and partly on strong soil upon a deep bed of sand, value about 15s. an acre. Fifteen shillings per annum, forborne thirty-one years, and improved at five per cent. compound interest, would amount to *£53*—but the value of the timber is more than four times this amount.

Mode of propagation.—Procure the keys from young, healthy, thriving trees, in October or November. Prepare the seed-beds 4 feet wide; 4 inches asunder, rake about an inch off the beds into the alleys. Sow the keys in November moderately thick; and then sow or sift about one inch of earth over them. In spring take away moss and weeds gently, and sift a little earth over them again. Weed them when they need it. If they are planted in rows four inches asunder, a two-inch hoe can pass between them without injuring the plants—and the weeds will be more easily destroyed. Next spring (in February) rake off gently moss, &c. sift half-an-inch more of earth over them, and in March and April the young plants will appear. During summer weed them—in October sow coal ashes near half-inch thick over them, and a little earth if rains have laid the roots bare. Next spring remove them to beds a foot asunder. After two years remove them to the nursery, placing them three feet asunder in the drills, and one in the lines; where they are to be hoed and kept clean till planted out.

The *plane* is raised in the same manner as the ash.

Instead of this method the seeds of trees are sometimes sown at first where they are to grow and remain. This makes the best timber, the plants suffer no check, nor feel the inconvenience of a change of soil; and the expense of raising an extensive plantation in this manner is very trifling. Besides it is found that the seeds of trees will grow and thrive in situations where the plants have failed. The most expeditious way of sowing the seed in this manner, is by a party of three men working together. The first with a paring spade takes up a turf; the second stirs the earth with a spade; and the third distributes the seed and covers it.

THE OAK.

The Oak.—Providence, with infinite wisdom, seems to have ordained that every country should abound in productions the most useful or salutary to its inhabitants. As this sea-girt island greatly depends upon the oak for its commerce and protection, so upwards of seventy different species or varieties of this invaluable tree have been now described by botanists, which afford ample choice for a variety of soils and situations.

At present we shall confine our attention to our two most valuable native species, *Quercus robur* and *Q. pedunculata.*†

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† The latter is distinguished by the circumstance of the acorns being placed on long fruit stalks.

Many extensive tracts of oak coppice abound in the Highlands of Scotland, which are cultivated chiefly for the production of bark. The timber is considered equal to the expense of *cutting* and *barking*, and the bark pays the original purchase, leaving a proper return to the purchaser.

The oak is found in a great variety of soils, in lands both light and stiff, wet and dry; but attains its greatest perfection, and grows most rapidly, in rich black earth, and in a strong deep loam, on a gravelly or clayey subsoil, where its tap root has depth to penetrate.—In light, sandy, or gravelly soils of little depth, it grows slowly, but is firm in texture, and arrives earlier at maturity, though of inferior magnitude than on more retentive soils.

Even in comparatively barren soils, where a red tilly clay forms both the surface and subsoil, and apparently void of calcareous matter, the oak flourishes with great luxuriance. This soil, if analyzed, would probably yield nothing more than water, rust of iron, silex, (flint) and alumine. Indeed oaks have been frequently observed to push themselves from the fissues of rocks, where no visible soil appeared, and to clothe the naked crag with wood.

Situation.—Although in barren, shallow soil, and in bleak exposed situations, the planting of the oak as timber cannot be recommended—yet there is much land planted with inferior trees, that would produce the oak equally well, and at any given age would be much more valuable.

Oak is, of all trees, the best adapted both for ornament and utility, in an inland situation; because the bark yields a quicker return, at every successive cutting and thinning, nearly equal to the value of the land on which it grows, and the timber serves the ordinary purposes of the country; whereas other timber may not find a ready market, if remote from water carriage. While the attention of gentlemen is directed to the adorning of their residences, no species is so well adapted for this purpose, as that which springs from the stock, and is a permanent beauty. If ornament alone is the object of the proprietor, although other forest trees ought not to be excluded, the oak seems to deserve a preference, by being allowed to rise to its full stature. It is the longest lived tree known in this part of the world, the yew alone excepted; and in its aspect imitates the boldness, grandeur, and duration of our hills.

It frequently happens also, that on farms of considerable extent, and variety of soil and exposure, small portions of no great value for pasture or cultivation, might be appropriated, without much diminishing the annual income of the farm, for entire plantations even of oak. But should it be thought that an entire oak plantation would be too great a sacrifice of the ground, a plantation of other trees of quicker growth, to be periodically cut as underwood, might be made, and the produce come in aid of the supposed disadvantage.

Growth.—The growth of a middle aged oak is generally from one to one and a-third of an inch in circumference annually—between its 20th and 100th year it sometimes exceeds this measure, and in its second century falls within it. But as the solid contents of the shaft consists less in its length than in the square of its diameter at the girting place, a small addition to the diameter there enlarges the square amazingly.

EXTRACTS FROM WHITE'S FARRIERY.

(Continued from page 272.)

This, with some little variation I shall soon mention, is the method of feeding race horses employed by the best English trainers of the present time. This variation is apparently trivial, and so it may be, but it appears to me to be an improvement. The allowance of food for the first twenty-four hours, by the best trainers, is sixteen pounds of hay, three quarts of oats, and three quarters of a peck of bran, with two gallons of water, besides what is used in making the mashes and wetting the hay, distributed in the following manner. They give neither food nor water until the morning's exercise is finished, which begins as soon as it is light, and continues exactly two hours. The same time is always allowed for exercise, the exercise itself, however, varying from the first day of training, which is that when he is taken up from grass, to the last, or when he is fully prepared for the race. As soon as he comes in from exercise he has two pounds of hay instead of three, as I have proposed, and a mash, as I have directed. This one pound of hay in the morning is the variation, and the only one to which I alluded. They give two pounds every two hours afterwards until eight pounds are given, always wetted with water, and the remainder, that is, the other eight pounds, at eight o'clock, when the horse is done up. After the first day the quantity of hay is gradually diminished, and that of oats gradually increased.——The hay is diminished one pound daily until it comes to eight pounds; there the allowance remains. The oats are increased half a pint in every feed daily, until the allowance comes to three half pecks in the day. This is never exceeded. The mashes and the bran are discontinued after the first week. The water continues the same from the first to the last day, that is, two gallons a day: but the hay is always well wetted; and, when the mashes are discontinued, the oats are wetted also. Eight pounds of hay may appear a small allowance for twenty-four hours; but it has been found quite enough for a race horse, for a hunter, and for a saddle horse. Race horses are of course supplied with the very best of oats and hay. They never have any other kind of food; and though sometimes they do not consume the whole of their oats, they rarely fail of eating all their hay. The exercise in training is not complicated or difficult; they have one rule which is scarcely ever deviated from. The walking exercise continues for a fortnight; during the remainder of the time they walk the first hour always, gallop the next half hour, and walk the remaining half hour, so as to come cool into the stable. If they happen to sweat, they are attended to immediately, and carefully clothed; if cool, they have only a sheet thrown over them, and cleaned leisurely. This is the regular system of training race horses.—Mild physic is sometimes given, but is not considered essentially necessary. What mode of training can be better adapted for hunters than this? and as for saddle horses, there can be no other objection to it than the trouble and attention it requires: let it be departed from, therefore, as little as possible.—Nothing more need be said on feeding or exercise. The quantity of hay I have named, if really good, is quite sufficient; if bad, or even indifferent, an increase of quantity will not compensate for the defect in quality.—Sixteen pounds for the first day may appear a large quantity; but when a horse is at grass, the stomach and bowels are accustomed to a certain degree of fullness, which must not be diminished suddenly. But it is of the utmost importance, where speed is the object, to keep both the stomach and bowels as moderately filled as is consistent with the performance of their functions. The method of training is greatly improved within the last twenty years, and is now, I believe, as perfect as it can be made. They never, I believe, keep their horses in hot, close stables, being fully aware how essentially necessary a cool pure air is to the attainment of that high degree of muscular power and wind which is required in a race horse. Hackney or road horses may do with less preparation or care as to feeding and exercise; but the trainers' method which I have described must be looked up to as a standard for general practice, and the nearer it is approached, especially for hunters, the better.

CHAPTER IV.

Structure, Economy, and Diseases of the Internal Organs.—The body is divided into four principal cavities, which are the skull, or cranium; the chest or thorax; the belly, or abdomen; and the basin, or pelvis. The skull contains the brain, or cerebrum; and the little brain, or cerebellum; it contains also the origin of the spinal marrow, named medulla oblongata, and the origin or trunk of ten pair of nerves, the principal of which are those which constitute the different senses as they are named; that is, smelling, seeing, hearing, tasting, and feeling. The brain is invested with a strong membrane, named dura matter, which is attached, however, more closely to the skull than to the brain, and apparently thro' the medium of blood-vessels. In taking off the upper part of the skull it is necessary to tear the dura mater from the bone; but there appears to be no adhesion between the upper part of the brain and the dura matter. The brain is divided into two parts, named lobes, each lobe having its separate covering of dura mater, which, dipping down between the lobes, forms what is named the falciform process. Between these two portions of dura mater, which form the falciform process, the great vein, or longitudinal sinus, runs, which dividing towards the back part, forms the lateral sinuses. There are several cavities in the brain which are named ventricles. On cutting away the upper part of the brain, the two lateral ventricles appear, which generally contain a little moisture, and in certain diseases several ounces of water are contained in them, forming the disease named hydrocephalus, or dropsy of the brain. In sheep, a transparent bladder, full of water, is often found in one of the ventricles; this bladder is named an hydatid, and the disease produced by it is named gid, or giddiness. The lateral ventricles are found to communicate anteriorly with the olfactory nerves, which, in quadrupeds, are very large and hollow: they contain also a little moisture, and may be named the olfactory ventricles. Posteriorly the lateral ventricles communicate with a cavity which, in the human body, is named the third ventricle, but in animals, the fifth, and this cavity has communication with the sheath of the spinal marrow. The two lateral ventricles are separated from each other by the septem lucidum. In the posterior part of the lateral ventricles, a long plexus of blood-vessels is seen on each side, lying loose in the cavity; these are named plexus choroides. The cerebrum, or brain, is separated from the cerebellum, or little brain, by a continuation of the dura mater, which is named tentorium. The cerebellum consists of one lobe only, and has no cavity. It appears to be the part from which the voluntary muscles derive their power, while the organs of sense, and the vital organs, seem to be dependant on the cerebrum, or brain. The principal diseases of the brain are phrenitis, or madstaggers, and hydrocephalus; these, however, with other subordinate and sympathetic affections, will be treated of in their respective places.

CHAPTER V.

On the Chest.—The chest of the horse is unlike that of the human body, becoming narrow toward the lower part, and terminating like the keel of a ship, a form more favourable to the flexion and extension of the fore legs, as well as of the shoulder-blades than any other. It is formed by the spine, the ribs, and the sternum. The chest is a distinct cavity, being separated from the abdomen, or belly, by a muscular partition, named diaphragm. The chest contains the lungs, the heart, and in the young colt, the thymus gland. The lungs are made up of the ramifications of the windpipe and blood-vessels with the common connecting membrane, named cellular membrane. The branches of the windpipe are commonly supposed to terminate in cells; but this is not the case: they are continued to the very surface, and their open extremities are closed by the pleura. This may be demonstrated by removing carefully a small portion of the pleura, and inflating the lungs. It will then be found that the air will escape readily. If melted wax or size is injected into the windpipe, or quicksilver poured in, the branches will be filled to a certain distance; but at length they become too minute to admit either of these fluids, and then the remotest part will be distended into what is called a cell. In the amphibia the bronchiæ are stronger and more distensible, so that the injection may be forced a little more freely, and the cells made to appear larger. This has been found also in the lungs of professed divers, who, by continual practice, render the bronchiæ stronger and more distensible. The windpipe or trunk of the lungs is composed of cartilaginous rings, joined together by a strong and elastic membrane. The cartilaginous rings are strong and thick in the front part of the windpipe, but gradually become thinner, and terminate in thin slips, or mere membranes which pass over each other instead of meeting end to end. By this contrivance the windpipe will admit of being compressed considerably, by the ends passing over each other; but such is the elasticity of the cartilage, that the moment the pressure is removed, the windpipe returns to its original form. The use of the elastic membrane which unites the cartilaginous rings, is to admit of the various motions of the windpipe, especially that of its being elongated, and so great is their strength, that we never in any accident, find it torn, or the cartilaginous rings separated from each other. At the upper extremity of the windpipe there is a strong cartilaginous structure, named larynx. It is composed nominally of five cartilages, which are named as follows: 1. Epiglottis. 2. Cricoid. 3. Thyroid. 4 and 5. Two Arytænoid, or funnel-like cartilages. The epiglottis is at the root of the tongue, standing up by its elasticity, so as to form a right angle with the tongue, by which contrivance it is forced down, so as to cover the windpipe by every morsel of food that is swallowed. The other cartilages, properly speaking, compose the larynx, and are much thicker and stronger than the epiglottis. The larynx is incapable of being compressed or closed, except at one part near the bottom of it, where they approach each other so as to form a chink, which is therefore named rima glottidis, or chink of the glottis. The internal surface of the larynx, including the epiglottis, is lined with a membrane of great sensibility, especially at the chink, where it is so exquisitely sensible, that the mucous fluid designed for its lubrication, often, becomes through disease a dreadful cause of irritation.

Notwithstanding the great sensibility of the membrane of the larynx, the same membrane when continued into the windpipe, appears to be nearly, if not quite insensible, as I have proved, after the operation of branchotomy, by scratching with the nail, or with a knife, which does not appear to give the animal any pain; but if a feather is passed up so as to touch the chink of the glottis, a most violent cough is immediately produced.—There are two glands on the outside of the windpipe, but very loosely attached to it by cellular membranes, which have been named thyroid, from their supposed resemblance to a shield.

(To be continued.)

DRILLING POTATOES.

Experience has taught the farmer that drilling in potatoes with the plough is a considerable saving in point of expense; but it is greatly disliked from the idea that the ground is not equally manured. In putting in potatoes in this manner, the farmer should not be niggardly of his manure, if he intends to have a good crop—nor heedless of the good effects arising from frequently removing the earth and laying it up again with the plough to the shoots, and he will find the produce will amply repay his industry. But the point to which I would draw the farmer's attention, is the period of taking the potatoes out of the ground—and in no case would I recommend him to use the plough. My practice has been to dig them out, and every two men to throw three drills together, the spade going to the bottom of the drill, and cleaning out as much of the manure as possible, which is thus equally dispersed over the new formed ridge. It will be found in a climate so liable to rain as this, that narrow ridges are the best, and when the process of clearing the field of the potatoes is finished, the ploughman should run a water furrow up and down between the ridges, and the ground is thus left safe, and always ready for an early sowing.

AGLAUS.

A Premium of £5 being offered by the Kenaught Branch of the N. W. Society, for the best Stallion calculated for husbandry and carriage use, attending Newtown-Limavady market during the season. Five candidates appeared, on the 12th July, namely—

High Flyer, ...	Mr. Lithgow's.
Farmers' Fancy,..............	Mr. Hanson's
Sportsman, ...	———
Father Paul, ...	Mr. Henry's.
Young Hero, ...	Mr. Ross's.

William Moody jun. Frederick M'Causland, and Arthur Sampson, Esqrs. the Judges appointed after carefully inspecting the Horses, were of opinion that none of them possessed sufficient merit to entitle them to a Premium, consequently the Premium was withheld.

CURRENT PRICES IN DERRY.

Oatmeal,	...	15	0	*to*	16	0	*per cwt of* 120*lb.*
Oats,	...	0	11	–	1	0	*per stone.*
Barley,	...	1	0	–	1	4	
New Potatoes,		0	5	–	0	7	
Beef,	....	0	5	–	0	7	*per pound.*
Mutton,	...	0	4	–	0	7	
Veal,	...	0	6	–	0	10	
Butter,	...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax,		45	0	–	56	0	*per cwt. undressed.*
Five hank yarn		2	8	–	3	2	*per spangle.*
Four, do. do.		2	6	–	2	9	
Three, do. do.		2	5	–	2	10	
One, do. do.		2	0	–	2	6	
Coarse Bagging,		2	6	–	3	0	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. Presdent,
Londonderry.

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That the following useful letter has been so long neglected, is owing to the temporary absence of the Editor:—

To the Members of the N. W. Society.

Gentlemen—The misfortunes of Ireland are generally ascribed to three great causes, absenteeism, want of manufacture, and the minute subdivision of lands. Those, who look on wealth as every thing, eternally harp on these strings, and yet it may be doubted how far their proposed improvements would be found conducive to morality or happiness. You are labouring to make your country more and more "endurable to live in," and thus deprive your great proprietors of their only excuse for absence, and with pride and satisfaction did I read, in the last number of your Magazine, the valuable testimony of your correspondent D. to the "happy and prosperous results arising from your labours." With you it can't be said that "tumult expels the rich landholders, and that their absence is a cause of tumult." But I sometimes feel inclined to doubt how far I should rejoice in the success of all the vows, which I am accustomed to hear offered, for the residence among us of our great proprietors. Political economists would hail the approach of the noble, the wealthy, the accomplished owner of a barony to the seat of his ancestors, or to the modern mansion in which change of fashion might fix his future residence. Moralists might feel inclined to ask if his character resembled that of Squire Thornhill, in the Vicar of Wakefield, "who knew little more of the world than its pleasures, and whose arts and assiduities had rendered him successful with every farmer's daughter within ten miles round;" or if he was "likely to employ the superfluity of his wealth in making dependants, by purchasing the liberty of the needy or the venal, of men who are willing to bear the mortification of contiguous tyranny for bread." But even should you call these wandering spirits from across the vasty deep, they will not come. Leave them their liberty. But their properties, secured to them by the public, should not be suffered to be so managed as to become a public evil—they are subject to regulations for the general advantage, and policy, justice, the interest of the absentees themselves, require that they should be taxed. Manufactures are said to be the chief cause of the wealth of England, (I shall not now enquire whether England is really wealthy or not) and it must be owned they have enabled many individuals to accumulate enormous fortunes, to purchase from the nobles of the land their properties, to obtain whole counties, nay, to hold in their hands, in some degree, the destiny of states. But as to make one beauty, thousands must be reckoned ordinary—so to make a rich man many must be poor—and it may be, that in a manufacturing district in England, studded every here and there with lordly mansions reared by the means of industry, there still might be found more poverty, more vice, more ignorance and misery, than in a circuit of ten times its extent in the N. W. District.—The house of a wealthy manufacturer is a pleasing sight, but look into the factory—ergastulum—which stands beside, where thousands are confined in a heat of eighty-four degrees, at work for fourteen hours a day—sickly and degraded in this world, and prematurely hurried to the next.

The following list of fines, imposed on the inhabitants of these places, will give some idea of them:—

	s.	d.
Any spinner found with his window open........	1	0
found dirty at his work..........................	1	0
found washing himself..........................	1	0
leaving his oil can out of its place......	0	6
repairing his drum-banding with his gas lighted..	2	0
spilling water on the stair case	1	0
slipping with his gas lighted................	2	0
putting out his gas too soon................	1	0
spinning with his gas lighted too long	2	0
having his lights too large, for each light	1	8
heard whistling................................	1	0
having hard ends hanging on his weights	0	6
on his carriage band...	1	0
being 5 minutes after the last bell rings	2	0
having roller laps, no more than two draws for each	0	6
going further than the roving-room when fetching rovings	1	0

Any spinner being sick, who cannot find another spinner to give satisfaction, must pay for steam, day,	6	0
found in another's wheel gate	1	0
neglecting to send his sweepings three mornings in a week	1	0
Two spinners found together in the necessary house; each	1	0
having a little waste on his spindle	1	0

At Tyldesly, where these fines are imposed, they work fourteen hours a day—the door is locked in working hours—the work-people are not allowed to send for water to drink, and even the rain water is locked up. This sort of system must accompany manufactures on the great money-making scale of England. But there may be manufactures otherwise ordered, and we have one—the linen. Woollen might be managed in a similar manner. At Parson's-town there are 50 looms employed in weaving woollen—these employ twelve combers at 12s. per week—fifty weavers at 9s.—one hundred and fifty girls at 2s. 8d.—one hundred and thirty at 2s. 2d. Woollen cloth of excellent quality is manufactured in your own district, and I send a sample to your Secretary by this day's post, made by a farmer's wife in Munterlony, of which Mr. Montgomery, the intelligent gentleman employed by you in the survey of your coasts, gives the following account:—

Sir, *Beltrim*, 31*st May*, 1824.

I am just favoured with the following statement of the charges attending the manufacture of blue woollen cloth, (of which I gave you a specimen on the 10th instant) by Mary Ballantine, wife of James Ballantine, of Cruckatanty, in Munterloney:—

1. Nine pounds of wool made ten yards of three quarters wide, when fully dressed, dried, and at home from the tuck mill.

2. It was spun on the little wheel.

3. It was spun by myself, Mary Ballantine, grist 16 cuts per lb. and I can spin good wool to 20 or 22 cuts per lb.

4. Spinning wool to 16 cuts per lb. would cost me 1s. per lb.

5. It costs me but 2½d. per yard for weaving. Cloth contracts or shortens, about a third of the length and breadth it measures from the loom, while undergoing the dressing operations in the tuck mill—*i. e.* you deliver the fuller twenty-one yards at yard wide—you receive in return only fourteen yards, by little more than three quarters wide, *when dressed.* A stranger would pay 3½d. or 4d. per yard for weaving the same cloth—I pay my weaver 2½d. by contract, for all grists, cloth, blanketing, and flannel. For dying I pay 1s. per yard for deep blue, (other colours are dyed cheaper) and 6d. per yard for dressing at the tuck mill of Thomas M'Roarty, of Altagh, in Munterlony.

7. It was woven by William M'Kenna, of Glenchuill, in Munterloney.

9lb. wool, here 10d. per lb.		7	6
9lb. at 1s. per pound spinning		9	0
10 yards weaving at 2½d. per		2	1
10 yards delivered, about 7 yards received back, dyed		7	0
7 do. dressed at 6d.		3	6
Costs of said quantity	£1	9	1

One-seventh of 29s. 1d. is 4s 1½d. or nearly 4s. 2d. per yard—but Mrs. B. was offered 6s. per yard, and thinks she could have sold it at 6s. 6d. at which 7 yards brings £2 5s. 6d. that is 2s. 4d. per yard profit. Hence, if home-made woollen cloth could be rendered fashionable, sheep would prove the most profitable stock for mountains—and there are many wide tracts of good pasture mountain for sheep, that lie too high for cultivation; too much in the regions of mist and mildew to ever ripen productive crops of grain, if even brought into a tilled state by any possible course of labour.

Employment of this kind might be furnished for your people, and thousands might be engaged in your fisheries without any danger to health or morality. But the great misfortune is, according to economists, the subdivision of lands, which multiplies so exceedingly the human race, and, at the same time impoverishes it. One grand remedy is colonization, on a gigantic scale. If it is true that five thousand persons only got to America last year, the shipping off a sufficient number, to thin our population perceptibly, would be a serious business. The plan of the Morning Chronicle, some time ago, of letting loose the small pox, might be more effectual—but it is a puzzling matter that in Ireland, there is the greatest share of comfort and of quiet where the population is most dense. As to the splitting or doubling up of farms—to the opinion of the generality of economists I would oppose the opinion of the admirable author of the observations on the population and resources of Ireland, a work which every Irishman should study with attention, but which I have not at hand at present. The following quotation from a writer resembling Dr. Stokes in talent and philanthropy, is worthy of remark. I could easily prove that large possessions are the chief causes of the number of mendicants in the kingdom, by the very arguments which have gained them the approbation of many writers—that they require fewer hands in works of agriculture. In many places, for a great portion of the year, the peasant has no employment. But I consider chiefly the misery of my fellow creatures, *which seems to increase with the riches of each district.*—

Four men only are necessary for the culture of one hundred acres in the most improved parts of England, and now it is proposed in Parliament to make farmers employ a certain number proportioned to their holdings, whether required or not. Shall I add, from the last quoted author, that "conquerors have always found a weak resistance in countries possesed by great proprietors. We have proof of this in all ages, from the invasion of the lower empire by the Turks, to the conquest of Poland in our own days." David Hume, speaking of the ancient republicks, says—Where each man had his little house and field to himself, and each county had its capital, free and independent, what a happy situation of mankind! How favourable to industry and agriculture—to marriage and propagation! These observations and hints I have thrown together for your consideration, happy if they shall furnish you with even a spark of light, to guide you in a way, which is rendered dark, rather by the ingenuity of man than the nature of things; for, gentlemen, to your wisdom, and not to that of Parliament, do I look for improvement; and, as the Roman was accustomed to conclude all his speeches by declaring that Carthage should be destroyed, I shall end my address to you by saying you alone can benefit Ireland.

19th June. S.

To the Editor of the N. W. Society Magazine.

Mr. Editor,

Whilst our country is writhing under the tongue of calumny, and patiently enduring all the miseries of misrepresentation, branded with the epithets of sedition and ignorance; it is truly distressing to the friend of humanity and civil order, to find those means which are designed for our improvement and civilization, proving our greatest grievance and calamity; and the administration of law, serving as a battery from whence the vituperations of slander or ignorance may discharge all their artillery. In an excursion to which my professional duties led me, at a distant part of your district this morning, I was roused from my peaceful slumbers by a most appalling spectacle—the military force of my country in the custody of the populace. Curiosity necessarily led me to enquire into the cause, and I shall briefly state to you the result.—In a lake bordering on Fermanagh and Tyrone, is an Island, long celebrated for its adherence to illicit distillation. A guager aided by an officer's party, of the 34th regiment, and some revenue police, I know not how many, set out with a design of visiting this Island. On their appearance, a country lad entered the only boat or skiff on the beach, and manfully pushed out, in hopes of frustrating their design. The party ordered him to put back, under penalty of being fired upon. He was resolute, and though the police discharged their carabines frequently so as to splash the water around him, continued to row off, 'till at length one of the soldiers declared he would bring him to, and levelling his musket, *shot him dead.* On the boat's coming to land, nothing illicit was found; nor had there been any seizure made. The unfortunate delinquent, with the guager and policeman, are now in Omagh jail, and will, of course, suffer the penalty of their transgressions. But it is not to cover them with obloquy, or to forestal the public opinion, as to their guilt or innocence I have taken up my pen—it is to awaken the public mind to a sense of the evils arising from the system that has been long pursuing with respect to illicit distillation in this country; and to raise my voice against the principle that sacrifices human blood for revenue, and compels the inhabitants of a country to rise up, in rebellion, against its authorities.—Your's, I know, is no political Journal, and this may be considered a political question; but, with Terence, I am sure you will say—"humanum nihil a me alienum puto." In vain may you endeavour to diffuse the seeds of industry and prosperity, unless peace extend her wings over your district—in vain may you endeavour to cultivate civil and moral habits and dispositions, whilst the legislature is at variance with you—the ranklings of revenge will defeat your intentions, and whilst you set forth the beauty, consistency, and sufficiency of the British constitution, a single example, by any avowedly acting under that constitution, in contradiction to your statements, will put to flight all your arguments, and defeat all your intentions.—Were the Chancellor of the Exchequer to state exactly the price at which human life should be estimated in this country, we might then come to a conclusion whether we are gainers or losers by the duty on spirits—

scarcely a year or rather assizes, passes by in our northern counties, without bringing to the bar one or more delinquents on the charge of murder in still hunting excursions; and though we hear but few convictions, I am grieved to say, that the public opinion does not always subscribe to the justice of the acquittals—and though the juries are acknowledged to be inclined to do their duty, yet witnesses are suspected of often finding it their interest to vanish into the air. From the acknowledged income of revenue officers, this has led people to suppose that persons of heavier metal were behind the scenes; and thus, those who are placed beyond the theatre of action, and should be incapable of any violation of law, not unfrequently are impeached with the guilt of such proceedings.

There are few who can be more averse to illicit distillation than I am. I know it to be destructive of morality, and an enemy to agricultural improvement, but as long as the present prejudice prevails against spirits made by licensed stills, and that *any* duty remains, it will be persisted in; it is not sufficient to put private distillation down, that public spirits be sold as cheap as the potteen, which it now is; it must be cheaper, until it acquire the character of being as good—and having once acquired that character, which a reduction in duty would easily allow it to obtain, when habits of order and industry are restored, and firmly rooted, it may be worth while to consider what income may fairly be drawn from distillation. But, until then, in the name of humanity, in the name of common sense, in the name of justice, let us have no duty, or none to serve as a bounty to murder. I care not whether it be the guager or his party, that shoot the country people; or the country people that shoot them, as long as the revenue laws promote the rivalry, the revenue laws are the immediate cause of the murder. As a matter intimately connected with the views of your society, the moral improvement of our country, I shall here beg leave to remark upon the number of licensed retail spirit shops, in the country parts of your district. Not a village but has several, not a hamlet but has one or more. The blame of this rests partly on the excise laws which lowers the rate of license, in such places to allow of licenses being taken out; and partly on the country gentlemen, who sign the certificates; and these gentlemen are, generally speaking, Members of the N. W. Society. This is not right, nor should it be continued in. The gentlemen, whilst they are, in one way, endeavouring to improve their country, should not, in another way, subscribe or assent to its demoralization. No alehouse should be allowed but where it is indispensably necessary for the accommodation of travellers; and upon this principle, one in twenty of the present number would be sufficient. The spread of licensed alehouses need not be feared —if vigilance be exercised against them, they will soon disappear. But I am trespassing on your time, and shall conclude, begging you to ascribe any undue warmth in the sentiments here set forth to the feelings natural on such an occasion as has given rise to them.

D.

ON SHEEP AND PIGS.

(*From the Munster Farmers' Magazine.*)

Sir—I continue to practice the method of stall feeding sheep with success, and have found some imitators in my neighbourhood. A Gentleman of Ross who has but a few town fields and never had a sheep before, now supplies himself with good mutton of his own feeding. He began last summer to feed them with clover, and since the month of September has supplied its place with potatoes and hay. He allows each sheep, (wethers of the common breed, about 13 or 14lb. per quarter) seven pounds of potatoes per day.—A sheep put in as the butchers call it clean, or just in fleshy condition, but by no means fat, will be very good mutton in six weeks, and prime in two months. As among larger beasts, some are more thriving than others, but few will require a longer time to fat than here mentioned. I have always observed that among the native breeds, the horned sheep are the most hardy and thriving. Clover seems to be one of the most favourite as well as most nourishing foods, and I suppose vetches would answer at least as well. They are fond of the fresh fiorin hay, and prefer it to the coarser and more stalky summer grasses, such as rye grass, cocksfoot and others, but the ligher swarth of old meadow composed of sweet scented meadow grass, native clover, and some of the poas, when well saved, is with me better liked both my sheep and cows.

Mr. Meade's method of fattening lambs, which has been long practised at Ballymartle, is excellent. The quality of his house lamb cannot be surpassed, and is, I believe very seldom equalled. My present plan differs from his only in the circumstance of confining the ewes in one of those small enclosures, and feeding them within instead of without. By providing a proper supply of rape, turnips or potatoes, they can be better fed in the early spring months within the inclosure than in the field, and contribute more largely to the dunghill. For a little advance of price one can easily buy in a few ewes that will drop early, some in January and some in February.—These will fatten three or four successions of lambs, and may then be fatted for the butcher. Ewes generally fatten faster, and also produce more suet than wethers. As they are very fond of every sort of cabbage, and will eat the stumps to the very root, the refuse of the kitchen and garden, which is otherwise thrown away, may in this way be turned to profitable account. Stall feeding in spring is particularly desirable for such Gentlemen as are unprovided with well walled fields.—When the native pastures begin to fall short the sheep feel a great desire to ramble, and are with difficulty restrained from doing injury. If tied as in the common way, they not only cease to thrive but lose what flesh they might have had. I think every country gentleman, (those at least who have small demesnes) will find it his interest to try the plan of confined stall feeding.

In giving rape and cabbage, it will be found advantageous to hang them with the heads down, or as, I manage it, to fix them on iron spikes so placed near the wall as not to endanger the sheep. They not only eat them with less waste, but apparently with much more relish than when thrown on the ground. After a day or two's confinement they become so familiar as to eat from the hand, and even seem to delight in having the cabbage and rape held ter them.

The Leicester and, I presume, the South Down may be kept in high condition during winter and spring with no other aid to their common pasture than good hay. The native sheep, which in fineness of grain and delicacy of flavour is undoubtedy superior to the former, requires more care and higher feeding. The unthrifty nature of our common breed probably arises in a great measure from want of care both in breeding and feeding them.—When young they get as little as possible of the mother's milk, and when grown up are kept fettered, and on such poor pasture in general that during half the year they do not know the comfort of a full meal. In breeding the common farmer never looks to the form either of ewe or ram. Under such circumstances their degeneracy is not surprizing. As however many are found with good wool, and some with good shapes, it might be worth while, and it certainly would not be difficult, by selecting a few of the best of both sexes, and continuing to breed from the handsomest of their produce, to try whether a valuable kind of sheep might not be obtained from the native race. That their flesh is excellent even under present disadvantages every one knows, and there seems little doubt that an experiment of this nature to which in fact, we owe the perfection of other breeds, might be attended with the desired success.

It may not be amiss, to mention a circumstance relative to sheep pastures, though probably already known to many of your readers. The health and soundness of sheep may be easily discovered by their colour, which on our best pastures is always of a yellow cast. Different shades of this colour will be given by different farms, but as far as I have observed all grounds on which they thrive impart it more or less. This is very necessary to be known by those who buy store sheep at fairs. Such as have very white wool and not closely attached to the skin, are commonly unsound or at least cannot be depended upon as healthy. The yellow woolled sheep carry self evidence of their soundness. The colour of the skin is also to be looked to, which in healthy sheep is clean and red. The liver complaint to which they are subject, is generally supposed to proceed from a particular plant growing in wet grounds. I do not know whether this point has been well ascertained, but I believe it is certain that where the plant does grow, sheep never long continue healthy. In general it is observable that they thrive best on the driest land, and that wet, swampy and moory soils for the most part disagree with them.

The native breed of pigs seems to suffer under general condemnation, yet I have some doubts whether the sentence is altogether just. That they have degenerated is certain, but I am disposed to think the degeneracy is ascribable to the same cause as in sheep, bad feeding or rather half starving them when young, and a total indifference to the form and quality either of boar or sow. I do believe that under similar management, the best imported breeds would soon become as bad or worse than the native. Every poor housekeeper, as well as farmer, keeps at least one pig, and neither the former nor the latter has any idea of giving the creature a bellyfull, until a few months before it is thought necessary to fatten him for market. It is evidently impossible for animals so treated to come to any perfection either of shape or size. The well shaped white Irish pig has however some recommendations. He grows fast, affords a clean, fine grained meat, and attains to a good size. Some of the best I have observed are in the neighbourhood of Fermoy. There seems to be little doubt that if the breed was cultivated with care for some generations, it would rank high among the best description of this most useful animal. The subject perhaps may be deemed worthy of reconsideration, though at the same time one would by no means recommend it to the discouragement of importation, of introducing better shapes and more thrifty constitutions. I have found all kinds that are equally well shaped nearly equal in hardiness. The short legged squat pig often looks better than he is, the other often worse. The common sort I believe (a great consideration to the feeder) are more rapid in attaining to full size.

HORACE TOWNSEND.

Extract of a Letter from Leslie Alexander, Esq. of London, to John A. Smyth, Esq. Treasurer to the N. W. Society.

"The worshipful Company of Mercers have made me the medium of conveying Ten Pounds British, as their subscription to your Society, which is to be continued annually; and when their property comes into their own hands, I am induced to think they may make it £50 per annum."

OBSERVATIONS ON THE USE OF LIME.

(From the Scotch Farmers' Magazine.)

Having practised the lime husbandry in different parts of the kingdom, and thought a good deal upon the subject, I take the liberty of offering such observations as have occurred to me, which, though you will receive them in a plain dress, have facts and experience to recommend them to your notice.

All soils, without exception, are benefited by lime, provided due attention is paid to the mode of using it, and the course of cropping afterwards followed, which, in every instance, ought to be gentle; for, whoever expects that land, after the application of lime, will bear a succession of exhausting crops, without injury, will to a certainty meet with disappointmnnt. It is not my purpose to enter into any chemical disquisition on the qualities of lime, a task greatly beyond my knowledge, and which has already been handled by men better qualified for it. Indeed, I am the less inclined to do so, from a conviction, that the generality of husbandmen will reap more benefit from a few practical hints, conveyed in plain language, than from a thousand volumes filled with theory and technical language.

I begin, first, by stating, that lime does not, in its own composition, contain any fertilizing principle, but is useful only by its operation upon substances really fertilizing, which it meets with in the soil, and which, without its operation, would remain in a dormant state; for, though it is perfectly certain, that lime has the power of attracting much, both from the earth and the atmosphere, it does not follow, that any of its own component parts, or, indeed, any thing it attracts or collects by its powers, will, of themselves, be food for plants. It is the effect produced upon these by lime, that renders them useful; and, from their decomposition, and the new combinations formed, the benefit results.—Without such combination, they would remain dormant; and the lime, in place of being useful would prove injurious.

Taking this for granted, it is incumbent upon every person using lime, to ascertain, with strict precision, the purpose he intends it to answer; whether, as upon strong wet clay, it is applied with a view to break the cohesion of the soil, and open it in such a manner as to allow the roots of the plants to take as wide a range as possible, in search of food, and, at the same time, sweeten and correct the acidity so prevalent in such soils. In those cases, a good dressing should be given at once, and such as to prevent the necessity of a repetition for many years.

Upon strong, deep, moist, loamy soils, where it is intended to put in action the latent principles they contain, most of which are found to consist of animal and undecayed vegetable substances, lime produces the most surprising effects, provided a judicious rotation of alternate white and green crops is followed. Such soils, after the application of lime, will produce bulky and valuable crops, with a much smaller proportion of dung, than if no lime had been applied, owing evidently to the active powers of the lime pervading the dung, and rendering every particle of it useful.

Upon poor, weak, weeping clays, where, owing to the quantity of acid and ferruginous particles, the dung is locked up, and prevented from exerting itself, the application of lime is equally salutary, by separating the acid from the iron, putting the vegetable matters into a state of activity, and opening the soil, in such a manner as to afford free scope for the roots to extend and stretch themselves out in every direction. Such lands, if they are dunged and laid into grass, immediately after the lime is applied, will have their value greatly increased, especially if due pains are taken to crop moderately, when they are afterwards broke up. In every instance, hard cropping after lime is hurtful; but, upon soils of this description, it is ruinous.

Upon deep, dry, loamy soils, where the principles of fertility are abundant, and which contain, within themselves, that happy mixture of stimulating and enriching materials, lime appears less necessary than upon almost any other soil. Such lands, if kept clean, and a proper rotation followed, will produce excellent crops, by the application of dung only. Lime, however, in small quantities, will be useful after every second dunging, and will effectually operate upon, and bring into activity, such parts of the manure as would otherwise have remained in a dormant state; for, whether it is owing to an imperfect fermentation, or to whatever cause, it is certain that a considerable proportion of all the dung applied to land remains in an inactive state, owing evidently to the want of alkaline, or calcareous matter, to operate upon it.

Upon light, sandy soils, which are seldom known to abound much with vegetable matter, lime is useful, in a double sense—First, by acting upon the decayed vegetables it meets with; and, next, by the decomposition of shells, decayed gravel, &c. which, by moulding down into earth, thicken the staple of the land, and form a soil much less liable to be hurt by drought, or indeed, any accident by which crops are generally injured. Having little moisture in itself, the lime readily attracts it from the atmosphere; which accounts for its resisting dry weather.

Upon soft, black, moorish soils, which certainly are the most worthless of any with which we are acquainted, the application of lime, and the after treatment, requires the greatest care. In no instance ought the dressing to be heavy: as the materials upon which it is to operate are scanty, perhaps 30 bolls per acre is as much as should be ventured upon at first; and if there is an opportunity of bestowing top dressings, of good earth, or compost, afterwards, and the land allowed to remain in grass for a series of years, a greater proportion of lime may be afterwards applied, with advantage; as a considerable quantity of vegetable matter will, by that time, be accumulated, upon which it will exert itself. But, in this, as well as the first stage of liming such soils, the cropping should be carefully managed, and the land returned to grass as soon as possible.

P.

FAIRS FOR AUGUST.

1st—Ardara, Bangor, Down—Ballytrain, Monaghan—Castledawson, Cross, Derry—Clady, Dromore, Moy, Strabane, Tyrone—Convoy, Malin, Donegal—Forkhill, Armagh—Tempo, Fermanagh—Kingscourt, Scraby, Cavan. 2d—Ardstranbridge, Tyrone—Ballinode, Monaghan—Callaghan, Callowhill, Fermanagh. 4th—Altmore, Castlederg, Orrator, Tyrone—Belleek, Armagh—Connor, Crumlin, Antrim—Derrilin, Fermanagh—St. Johnston bridge, Donegal. 5th—Ballina, Cavan—Ballinamallard, Belcoo, Newtown-Butler, Fermanagh—Dunfanaghy, Muff, Donegal—Drum, Monaghan—Omagh, Tyrone. 6th—Aughnacloy, Tyrone—Ballinacarrig, Cavan—Castleblaney, Monaghan—Maguire's bridge, Fermanagh—Park, Derry.

List of Premiums offered by the SOCIETY OF ARTS, *for the Session* 1823-1824.

The Gold Vulcan Medal, or Thirty Guineas, for inventing an earthenware crucible to endure greater heat than those now in use; and for making crown or window-glass as transparent and free from blue or green colour, as the best German sheet.

The Gold Medal or Fifty Guineas, for a black dye for silk or wool, superior to any in use. For the best mode of staining cotton cloth with a red colour, by an immediate application of the colouring matter, and equal to the red colours now procured from decoctions of madder. The same, of a green colour, equal to the colours now formed from decoctions of weld, and solutions of indigo. For a mode of preparing red pigment, fit for use in oil or water, and equal in tone and brilliancy to the best lake and carmine. For publishing the best mineralogical and geological map of any county in the United Kingdom, on a scale of not less than one inch to to a mile. And for publishing an accurate similar map of Ireland, on a scale of not less than five miles to an inch.

The Gold Medal or One Hundred Guineas, for the best substitute for the basis of white paint, equally proper as the white lead now employed. For the best substitute for Stockholm tar, equal to the best of that kind, and the produce of Great Britian and the colonies. And for discovering, within Great Britian or Ireland, a quarry of White Marble, equally fit for the purposes of statuary as that imported from Italy.

STRAW PLAT.

It is known to most of our readers that the manufacture of straw plat is carried on most extensively by Messrs. J. & A. Muir, of this town, who employ no less than 1100 of the inhabitants of the Orkneys in that branch of their business alone. These gentlemen have recently turned their attention to the production of an article in imitation of the Leghorn plat, and after a variety of experiments, have succeeded to such an extent, that the London Society of Arts, has conferred on them its silver Ceres medal, for specimens of the plat laid before that insitution.—We understand that Messrs. Muir first tried various grasses but have finally adopted the straw of Rye, and have this season laid down several acres of that grain, for the purpose of vigorously prosecuting this highly laudable enterprize. We also learn that they have already prepared a sufficient quantity of this kind of plat to commence the regular manufacture of bonnets, which in compliment to the society which has so unequivocally testified its approbation of their labours, they intend naming "The Adelphi." We have seen some of those in a state of preparation, and have no hesitation in stating, that they are in every respect equal to the finer description of Leghorn bonnets, from which, indeed, they can scarcely be distinguished on the closest inspection, so nearly do they approximate in the colour of the straw, fineness of the platting, and the manner in which the plat is united together. Greenock will, therefore, be the first place in Scotland to commence a rivalship, which we have no doubt will prove a successful one, with the workers of the continent in this expensive article of dress, and to exhibit it in similar perfection, from straw grown, platted, and knitted in Scotland.—*Scotch Paper.*

CURRENT PRICES IN DERRY.

Oatmeal, ...	15	0	*to*	16	0	*per cwt of* 120lb.
Oats, ...	0	11	–	1	0	*per stone.*
Barley, ...	1	0	–	1	4	
New Potatoes,	0	5	–	0	7	
Beef, ...	0	4	–	0	6	*per pound.*
Mutton, ...	0	4	–	0	6	
Veal, ...	0	4	–	0	6	
Butter, ...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax,	45	0	–	56	0	*per cwt. undressed.*
Five hank yarn	2	9	–	3	4	*per spangle.*
Four, do. do.	2	7	–	2	10	
Three, do. do.	2	8	–	2	11	
One, do. do.	2	0	–	2	8	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. HEMPTON, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. II.—NO. 37. WEDNESDAY, 4th AUGUST, 1824. Price 2d.

The green fields of Erin present at this time a glorious prospect to the eye of the traveller. An unusual breadth is under cultivation, and perhaps in the memory of man, never did more flourishing crops adorn the face of the country. From Derry to Killarney taking the route by the Eastern side of the kingdom, we are enabled to state, from personal observation, that there is every appearance of an ample recompense to the toil of the husbandman. If we can but have peace amongst us, under Providence, we shall have plenty.

Southward of Newry no flax worthy of notice was to be seen. A ridge or two was to be seen here and there, but so badly had the ground been prepared, or the sowing so long deferred, that instead of attaining the length of 3 or 4 feet (as in the North) the greater proportion was not much more than as many inches. One general remark is worthy of being recorded which is, that the crops generally speaking are as forward in the North as in the South. Every where* so far as the plough or spade can be used with even the chance of a crop, white crops or potatoes are grown, the proportion of pasture is very inconsiderable. In the wheat districts that crop is strong and healthy. The potato crop will be most abundant; from the great drought however, in the Northern counties, potatoes, oats, and flax have suffered partial injury.—From the same cause the early meadows will, in many cases, be light. The hay harvest is far advanced, and some flax had been pulled ten days ago in the neighbourhood of Newry and also of Strabane.

Generally speaking, green crops (except the potato) are wholly neglected. The method of drilling potatoes is getting very generally into use, but without more ample supplies of manure than farmers are in the habit of providing, the incessant repetition of white crops must at last exhaust the fertility even of our superior soil, and render the produce poor and scanty.

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* Except in some instances of great grazing farms an sheep pastures.

ON THE ECONOMY OF FEEDING HORSES.

(From the Transactions of the Horticultural Society.)

The quantity of corn which a horse will consume, when given, as it often is, without limitation, is amazing. Two pecks of oats per day, and a stone of hay, is the quantity stated to be given to post-horses, by two eminent coach-masters mentioned by Sir John Sinclair, (in the Appendix to his account of Scots Husbandry, vol. 2. App. No. 23.); and a charge for a similar consumption has not been unheard of, for horses which had no heavier duty to perform, than that of carrying their owner a round or two of Rotten Row. Thus is expended, in the maintenance of one, often useless, quadruped, what would amply maintain six human beings.

The practice of farmers in the most improved districts of the country, although it comes far short of such extravagance in feeding their horses as that before instanced, is nevertheless sufficient to show, that too little attention is paid to economy in this important branch. Three feeds of oats, and 1¼ stone of hay, is the usual allowance to horses working nine hours a-day; and, consequently when oats are 25s. per boll, and hay at 1s. per stone, the daily expense of each horse, for corn and hay alone, is 2s. 5d.; and tho' this expense is considerably diminished at certain seasons, still the annual charge of maintaining a work horse, is computed by farmers at from £30 to £40.

The object of the present paper is to show, from actual experience, that this branch of farm expenditure may be greatly diminished; that the daily food of a horse, working the usual hours, may be reduced to an expense, at no season exceeding half of the amount above mentioned, and, at certain seasons, not exceeding one-sixth of it; and this, while the best condition of the working stock, both in appearance, and in aptitude for labour, is maintained.

To this subject, the author of these observations has, for the last ten years, been led to pay particular attention. The circumstances of his farm demanded no ordinary regard to this important branch of farm management; for, from the exhausted state in which a soil, naturally thin and poor, had been left by the former tenant, it was some years before the produce was even adequate to support the stock necessary for the management of the farm. Distant carriages of dung and lime, and of all the materials wanted in the construction of extensive farm buildings, required an extra number of work horses for some years; while scanty crops, both of corn and hay, afforded but very sparingly the means of maintaining them. Under these circumstances, his attention was earnestly directed to the economical management of the slender means which he possessed, for maintaining so large a working stock; and various substitutes for the more expensive articles of food, were submitted to experiment.

The experience of many farmers has ascertained, that there are few articles of farm produce which afford a more valuable addition to the ordinary food of working stock than the Swedish turnip. The common turnip is no doubt useful in the same light; but it is a weak and watery food when compared with the Ruta Baga. This root is greatly more nutritious, in proportion to its bulk, more solid in its texture, and more agreeable in its flavour, than the common turnip.—Horses are exceedingly fond of it; and it now forms an important part of the food of working stock on most farms. In common with most farmers, I employ potatoes largely in the feeding of my working stock. I have made various experiments to ascertain the difference between this root in its raw state, and when prepared by boiling, or by steam; the result of which I hold to be, that potatoes, when given raw to horses, form a very nutritious and wholesome food, but keep the horses too soft for severe labour.—When boiled or steamed this objection is wholly removed; and horses fed on potatoes so prepared, with a very moderate allowance of oats, are in as high condition, and capable of undergoing as severe labour, as when kept on the highest feed of oats and hay.

The late and bad harvest of 1812, and the probability that potatoes, as well as grain, would rise extremely in value before next crop, led me to attempt some substitute for the large quantity of this root which I annually consumed with my working stock.—Potatoes, indeed, had risen, even before winter, to nearly three times their usual price, in the neighbourhood of my farm; and the saving which I effected, by the means afterwards to be noticed, did, in fact, enable me to sell, in the following spring, a large quantity of potatoes, at the extraordinary price of 30s. per boll, while the year before, I had purchased potatoes for my horses at 8s.—The boll I allude to is a provincial one, and weighs 42 stones Dutch weight.

Feeding Horses on Whins—I had heard talked of, but rather as one of the fantastic experiments of theoretical farmers, than as a matter of real practice. The abundance of the material, supplied by every bit of waste ground on my farm, was an inducement at least to put the thing to the test of experiment; and I took care, that the scale on which it should at first be tried, should not be such as to attach much ridicule to the failure. Having collected a small quantity of the succulent shoots of the whin, which were bruised, and put into the manger of two stalls before the horses came in from their morning yoking, I was not a little pleased to see, that instead of beginning to their hay, both horses completely finished their new mess, before they ever lifted their heads to the hay-rack. A larger quantity was provided the following day, and the experiment was repeated, giving a quantity which might weigh from 2 to 3 lib, to each of 8 workhorses. It was eaten by the whole with such avidity, as to show, that much larger allowance would have proved highly acceptable. The day following, I varied the experiment, by not giving them the whins till their oats were put before them, a feed of whins being put in the opposite side of the manger. They preferred the oats, but certainly showed that they had some difficulty in settling their choice; occasionally snuffing at, and taking a mouthful of the whins, while they were eating their corn; which was no sooner finished, than they began with the same avidity as they did the day before, and ate up the whole whins that were before them.

So far the experiment had succeeded. It was ascertained, not merely that horses might, from necessity, be brought to eat whins, but that no food could be more acceptable to them. It remained to be seen, how far it was as wholesome and nutritious, as it appeared to be palatable; and this only time could show. There was at least every reason to believe, that a species of food, eaten with so much avidity, would not likely prove injurious; and the temptation to continue the experiment, was a very strong one. I, therefore, determined to set zealously to work; and, for the approaching winter at least, to feed my horses, as it has been sneeringly called, 'on Furze Faggots.' The first *desideratum* was a method of bruizing the whins, more expeditious than the imperfect means I had used in my small experiments; and it occurred to me, that some contrivance of the nature of a bark-mill, would be the cheapest and most effectual apparatus I could employ. I procured an old millstone of tolerable thickness; mounted it on a spindle or horizontal axle; one end of which was attached to an upright post, by a swivel working on a pin, on which it might revolve as a centre. To the other end of the spindle, a swingle-tree was hung by a hook, also working on a pin; the course on which the stone revolved, was paved with coarse flags. I furnished a woman with a pair of hedge gloves, a sheep-skin apron, an old reaping hook, and a short-forked stick, with which to hold the whins, while she cut them with the hook. A boy, with a small cart drawn by a mule, which had long been employed as a drudge on the farm, was added to, and completed the establishment, with which it was proposed to feed 12 horses, *viz.* 4 pairs of work horses, a saddle horse, and three colts.

On the 30th November 1812, the plan of feeding, now to be described, was begun.—The woman went out to her shearing in the morning, while the boy and his mule were occupied in carting turnips home to the cattle in the courtines; or to the pastures, for the outlyers and sheep. The manner in which the whins were cut, needs little description,—the woman laying hold of the branch with the forked stick, with a cut of the hook drawn towards her, trimmed off such a part only of the ligneous substance of the plant, as connected 3 or 4, or more, of the succulent shoots of the year's growth. By the joint use of the hook and fork, these were laid into bundles or faggots, and compressed, as they were formed, by a stroke of the foot.—The woman soon became very expert at the work, and cut in the course of 6 or 7 hours the whole quantity of whins then given to 12 horses. The cart then came round for the faggots, collecting the cutting of each morning and the preceding evening, which was forked in with a common pitchfork; pressed down by the boy's feet, (who was furnished with a pair of coarse leather gaiters to defend his legs;) roped down like a load of hay: carted home, and deposited at the bruising-mill. This was the morning work—the business of the afternoon was to bruise them.—The mule was yoked to the mill, which it drew with perfect ease, a proper quantity of the whins being previously spread round in the course of the stone. The boy followed the stone with a pitchfork in his hand, with which the whins were constantly turned as the stone passed over them; when sufficiently bruised, they were forked into a large frame wheel-barrow, such as is used for turnips, and the course filled anew with whins.—About 3 hours work finished the whole; and the food, thus prepared, was wheeled off to the stable. The horses continued to manifest the same relish for this food as at first; and, in the course of a few weeks, I was sensible of the most material improvement in their condition. This was particularly observable in their coat. No horse sweated under body-clothes, and the steams of his own dung, ever shewed a sleeker and finer coat than my work-horses did after they had been 6 weeks on their feed of whins; and although some of the severest work I had ever engaged in as a farmer, fell to their lot this winter, they not only kept, but improved their condition during the whole season. This system of feeding was regularly pursued from its commencement in November till the middle of March. The horses had, along with their whins, as much straw as they chose to eat, and 3 lib. 2 oz. of oats per day till the beginning of February, when their allowance of oats was doubled; the quantity of oats being the same as I had been in use to give, when feeding with Swedish turnip or potatoes.

Such was the experience of the first year. The result exceeded any expectation I had formed of it, even after I had fairly ascertained the practicability of the plan. In the month of March, instead of having, as usual finished the crop of yellow turnips, and nearly half the Swedish, both of these crops, with all the yams and potatoes, remained untouched. The yellow turnip lasted till the end of May; and the Swedish turnip, chiefly consumed by feeding stock, afforded a remainder, which carried on my horses to the second week of June; after which, the yams came in for their summer food. The potato crop, instead of being as hitherto inadequate to my own consumption, was sent to market at 30s. per boll. The hay stack remained untouched; and the whole hay consumed in my stable this season, was a remainder of one hundred and eleven stone.

Encouraged by this flattering result, I began the whin feeding on the 26th November of the following year. I had not yet ascertained what the quantity of whins given to the horses actually was. I now weighed the day's provision; and, repeating the trial five or six times at different intervals, I ascertained, that the quantity given to each horse was from 17½ to 19 lib. per day, the average of the trials being 18¼ lib. The same quantity of oats was given this season. The horses continued to show the same relish for the food; and their condition was equal to what could be produced by any feeding, or any mode of treatment, even in cattle less exposed to the heavy labour, and vicissitudes of weather, which attend the winter work of a farm.

On RAISING *small* FRUIT TREES *from* SEED.

(From the Irish Farmers' Journal.)

Sir—Communications on agriculture or gardening are particularly interesting when they come before the public at a time when any experiments they recommend may be generally tried, and in this respect my present letter may not be unacceptable to your readers.

Having for some years observed the difficulty of obtaining and preserving good kinds of gooseberry and currant trees by the ordinary method of cuttings, I was induced, in 1819, to sow the seeds of some different varieties of those fruits, conceiving that if I *chanced* to obtain a few good plants, they would be more likely to flourish in their native soil, and to produce better than strangers, and also would be less liable *to run out*, as the phrase is, or deteriorate in health and quality of fruit year after year.

Under these impressions, having prepared a seedling bed, slightly manured with the cleanings of a pigeon-house and the scourings of a drain which led from a laundry, (preferred on account of the fertilizing properties communicated by the soap suds to the mud,) I sowed in drills about two ounces of white currant seeds, and the same quantity of red and black, in the beginning of March.—In May they were overground and very thick—this I expected, and accordingly thinned them considerably, leaving fifty of the best looking and straightest of each kind. They attained in that year the average height of nine inches—the black were the most luxuriant. The following autumn I planted them out in rows at about eighteen inches asunder, and allowing an interval of only a foot between each tree, as I intended to keep them low until their produce should decide their respective merits—and although it is the general custom among experienced gardeners to dig in manure about the roots of small fruit trees, yet I never had the soil stirred about them, except superficially with the hoe, to keep them free from weeds, and they had the benefit of that manure only which was put in the ground at the same time with themselves. In the spring of 1822, some of the black currants shewed blossom, which I did not suffer to remain. In the following year the black bore abundantly; but there were not more than half a dozen trees which might be pronounced decidedly good—the fault was not in general in the flavour, but the fruit was small and insignificant. A few blossoms on the white and red kinds were nipped off in the early part of the season.

This year the trees are in very good bearing, particularly the white, of which there are seventeen very fine trees, one especially, of fine amber coloured fruit, much agreeing in appearance with the description of the "*ribes Banksia*," in the transactions of the horticultural society of London for 1823, but of a peculiar rich flavour, and in every respect decidedly the finest white currant I ever saw. The red have turned out but very indifferently—the fruit is in general small, and has too much acid in the taste: there are but four trees of this variety at all worth retaining in cultivation.

I sowed some seeds of gooseberry of different kinds in the spring of 1820, they have as yet shewn no signs of bearing, and I do not suppose that they will afford a favourable result, as their leaves are small and the prickles very thickly set, which is seldom the case in bushes which produce good fruit.

In the gathering of the fruit from which the seeds were saved, no discrimination was observed as to their situation in respect to other varieties; they were mostly chosen from trees trained against a wall, on account of the size of the fruit being a trifle greater than that on standards—and there had been no interference whatever with the blossom, such as introducing foreign pollen, or depriving them of stamens, &c. and no means except cutting resorted to force the plants into bearing. In fine, I have been perfectly satisfied with the experiment, as in addition to the amusement afforded to me, I have acquired a number of excellent trees reared on, and therefore more congenial to the soil for which they are intended.

I remain, Sir, your obedient servant,

P. D.

TORREFIED AND BURNED SUBSTANCES.

There is no branch of practical farming that deserves more attention than what comes under this head, as there are but few lands on which this substitute for manure cannot be readily obtained. For upwards of half a century the application of lime, as a mode of fertilizing land, has been generally resorted to; and in some instances, the burning of clay, and also paring and burning of old grass lands, have been partially practised; but it has been only within these thirty years that those stimulating applications have become a systematic part of agriculture.

Lime, burned earth, and ashes, are the principal manures under this head, and I shall treat of them severally, not only as to the manner of producing them, but as to their respective applications, all requiring much judgment in their preparation and use under a variety of circumstances.

Lime.—There are but few agriculturists who are not well acquainted with the properties of lime, and its peculiar advantages on various soils; it will be therefore, unnecessary to enter into detail on its many advantages; I shall, however, make such general observations on its preparation and use, as may tend to assist the inexperienced farmer.

First.—Lime-stone, which is deep-coloured, and difficult to break, usually produces strong lime, and is not easy to reduce, and should be applied sparingly on arable lands, especially on light or exhausted soils. However, the most caustic lime may be advantageously applied on grass lands that have a superabundance of vegetable matter, and which it is necessary to destroy in order to promote a growth of sweet and kind herbage.

Second.—On exhausted or light soils it is more judicious to apply lime only as an assistant to a compost heap intended for the improvement of such soils, as the former are generally deficient in vegetable matter, and the latter have seldom that portion of tenacity to be served by caustic applications; but by mixing the lime first through a quantity of maiden earth, upon which it can act with effect, it will then give fertility and strength to the land on which it may be applied.

Third.—It is considered by many old practitioners, that lime is more efficacious as a manure when only half burned. On what principle this assertion is founded, I cannot conceive; for if it be necessary to have the lime-stone calcined, that it may become a more valuable application to the soil, of what benefit is it to leave part of it in an unburned state? It is said, that by leaving the heart of the stone in its original state, it acts for a greater length of time as a stimulant to the soil, as it throws off coats of half calcined lime annually, until it is finally reduced. But surely, supposing this to be the case, it must be admitted, that much additional expense must be created by such practice, and that nearly half the quantity of well burned lime would more effectually tend to the improvement of the land, particularly when applied on the surface.

Fourth.—The injudicious practice of giving a large dose of this active stimulant to soils which do not require them, is one of the great errors among Irish farmers, and is to be witnessed in many corn districts in this country. This over-stimulating of any kind of soil whatever, is most injudicious; for as lime only acts by decomposing the vegetable matter of the soil, and by bringing the land into a state by which it is made more capable of imbibing moisture, and receiving carbon, a sufficient quantity of lime to bring it to such a state is all that is necessary. The more vegetable matter which any soil contains, the more lime may be applied, and this vegetable food may be supplied artificially, if necessary ; but on no account should soil deficient in it be forced into a state to make it produce white crops.

Fifth.—There is no doubt but lime does not possess in itself fertilizing properties, neither does it enrich the land, although it may improve its texture. This has been illustrated by many experiments, and I have observed, that lands which have been repeatedly limed for thirty or forty years, have annually degenerated in productiveness. It, therefore, may be justly considered only as an alterative and a stimulant, and not as an enricher of the soil.

Sixth.—Lime should not be allowed to remain long in heaps on the field, especially such as has not been previously slacked, as it is likely, in such case, to destroy the vegetative properties of the soil on which it lies, and neither corn nor grass will grow on such spots for two or three years afterwards ; this further evinces that the over stimulating of land is very pernicious.

By the judicious application of lime, both culmiferous and leguminous crops can be abundantly produced ; and I have known, in many cases, better turnips and potato crops raised in this way, than by the best farm-yard dung. The season, however, should be favourable, and the soil so treated inclined to moisture, otherwise leguminous crops will be uncertain in proving productive : but there is every probability of a fair average crop being obtained should they be judiciously sown, and the land suited to an application of this kind of manure. When used for this purpose, it should be allowed to slack in the heaps before it is carted out ; it should then be distributed in the drills in the same manner as other manures, and then covered, and the turnip seed sown as soon as possible.

In Ireland lime is principally applied on summer's fallow as preparatory for wheat, and this is often performed so late, that it has not sufficient time to be blended with the soil before it is necessary to deposite the seed corn ; the consequence is, that the soil does not receive half the benefit which might be otherwise derived from the lime, and from repeatedly falling into this error, farmers are apt to imagine that more of it is necessary than what really is. I shall not, however, attempt to say what quantity is most proper to apply, as this depends on the nature of the soil; but I will venture to assert, that the *harrowing* of it in, when applied on summer's fallow, should always be adopted.

An account of the improvements on the estates of the Marquess of Stafford, &c.

A work bearing the above title was published three or four years ago, it embraces a detail of the improvements on the Marquess's estates, both in England and in Scotland. The latter are those to which our attention shall be turned at present. The county of Sutherland, the scene of these improvements, is the N. W. extremity of the Highlands of Scotland, lying about 3 degrees north of the most northerly point in Ireland. The climate, of course, is more unfavourable for the fruits of the earth, yet not so much as might be expected in so high a latitude.

The following is our author's account on this point—" Owing to the high northern latitude, and the almost insular position of this county, the air is moist and sharp, and the exposure to the sea-breeze is adverse to the rapid growth of timber, especially near the coast. The climate is variable; but though the winters are tedious and boisterous, it is seldom that the snow lies long on the coast, and even in the interior it prevails less than in the central Highlands of Inverness and Perthshire. The springs are cold and ungenial, and are frequently prolonged late into the year, so that the summers consequently are short.—But owing to the great length of time that the sun is above the horizon, and the great increase of heat by the intense reflection from the hills, a most rapid vegetation takes place, and the harvest on the coast side, is got in earlier than in a large proportion of Scotland. The evenings however are never warm, and among the mountains, are always very cold piercing and chilly, frequently accompanied with mildews and early frosts, which sweeping down the glens and the courses of the burns, destroy every sort of crop and cultivated vegetable. The commencement of October is generally fine clear weather, but the remainder of the year is boisterous and unsteady."

Thus it appears that the region of which we have been speaking bears the same relation to Scotland, that our N. W. district does to Ireland. And as Scotland generally is greatly inferior to our country in soil and climate, the same inferiority in both these respects belongs to Sutherland as compared with the N. W. District. If splendid and wonderful improvements have in a short time been effected, in a climate where improvement might at first sight have seemed impracticable, how can we avoid indulging the most pleasing anticipations of the inestimable benefits likely to redound to our country, from the measures now in progress for its amelioration!

We have adverted to climate—now for the soil. "Few districts of Scotland possess so small a proportion of land fit for cultivation, compared with its extent; and previous to the year 1811, even a small part of that was brought into cultivation. Each shore is fringed, (if the expression may be used) with a narrow border of arable land, which on the south east coast, extends from a few hundred yards to about one mile in breadth. The interior consists entirely of mountains, which rising rapidly from the cultivated land or from the shore, and increasing in height as they retire from it, are intersected by deep and narrow glens, forming the beds of the burns that descend in every direction to the rivers, which conduct their waters to the ocean. The mountains towards the eastern and central divisions, are of a round and lumpy form, covered naturally with heath, until the burning for sheep enables the grass to spring up. Those situated to the north are a complete congeries of rock heaped one upon another, between the interstices of which the grass grows with much sweetness; and where the spaces are larger than usual, the inhabitants carry on a precarious cultivation by means of a push spade called the cascroom.

From the local situation of Sutherland it is evident it was destined to be the very last part of the Highlands, likely to be affected by the rapid change which was powerfully operating upon every other part of the Island. The power of the crown diminished in proportion to the distance from the seat of government, whilst the authority of the chieftain of the clan was increased. The wealth of the chief consisted in the number of his men capable of bearing arms. In the other highland districts the effects of civilization were more early felt, and a superfluous population more early discouraged, they were also enabled more easily than the people of Sutherland to get rid of their unnecessary hands, who found occupation by the improving fisheries and commerce of the low country.

Thus bound down by circumstances from which they could not relieve themselves, the Earls of Sutherland continued to find that, the principal means by which they had to maintain their ancient consequence in the country was, by raising for the service of government one of those corps well known by the designation of a "family regiment." The consequence was, the unhappy system of encouraging and fostering a superabundant population was persevered in.* The conversion of the other highland districts into sheep-walks caused a great accession of strangers, in a country already overstocked with inhabitants.

The effect of this last circumstance was very important, and very injurious, as it not only increased the number of the people in an unnatural manner, but did so with a population the least desirable in point of industry and exertion. The numbers were also occasionally augmented in a way still less likely to improve the habits of the people of Sutherland. This county formed the receptacle for many of the tenants from the adjoining country, who escaped into it in order to avoid paying the rent they owed their landlord, as well as to many who were ejected for irregular conduct. Thus was the county of Sutherland kept in the same state it had been for ages, or rather the evils of the system were infinitely increased throughout, at the very time that the rest of the country was rapidly advancing in the contrary direction.

Every tacksman (middleman) paid the bulk of his rent by the number of men he could raise, his son was promoted in the Sutherland regiment according to the number of recruits he furnished. All claimed kindred with the chief, they were his companions in peace as they were his associates in war. Their habits were, therefore, the very reverse of industrious, and the very last wish of their heart was that any change or improvement should be introduced; the first consequence of which would have been to put an end to the easy and idle life they led, and to cause them to adopt habits of regular industry, and continued application. These lazy tacksmen exacted from their sub-tenants the most oppressive services, and by good management often contrived to hold what they retained in their own hands rent free.

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* In this feature also the resemblance to our own country is but too striking.

The land was held "run rig," or like what is called common field land in England, but in much smaller patches. The amount of the whole rent was settled by the factors, which, together with the land, was apportioned by a jury of elders, among the different occupiers. The hill pastures were held in common; the right of pasturage being regulated by the extent of arable ground which each person held.

In case default was made by any worthless fellow, he was left to do as he liked; and the industrious, hard-working, sober man, who had discharged his own rent was charged with a portion of that due by the idle profligate who escaped. The cruelty and oppression occasioned by this mode of proceeding, was beyond belief; so deep a root had it taken, however, that it was not completely abolished until 1816.

Such being, until very lately, the condition of the estate of Sutherland, the effect was to scatter thickly, a hardy but not an industrious race of people up the glens, and over the sides of the various mountains, who, taking advantage of every spot which could be cultivated, and which could, with any chance of success, be applied to raising a precarious crop of inferior oats, of which they baked their cakes, and of bear, from which they distilled their whiskey, added but little to the industry, and nothing to the wealth of the empire. Impatient of regular and constant work, all the heavy labour was abandoned to the women, who were employed occasionally even in dragging the harrow to cover in the seed. To build their hut, or get in their peats, or to perform any other occasional labour of the kind, the men were ever ready to assist, but the great proportion of their time, when not in the pursuit of game, or of illegal distillation, was spent in indolence and sloth. Their huts were of the most miserable description. They were built of turf dug from the most valuable portions of the mountain side. Their roof consisted of the same material, which was supported upon a rude wooden frame, constructed of crooked timber, taken from the natural woods belonging to the proprietor, and of moss fir dug from the peat bogs. The situation they selected, was uniformly on the edge of the cultivated land, and of the mountain pastures.

(To be continued.)

We have respectable authority for stating that some English gentlemen have entered into an arrangement with a gentleman in the Western extremity of the county of Donegal, with a view to explore the mineral riches which abound in that quarter. The Guibarra river which is not distant, it is expected will be found an useful channel of communication to that hitherto almost deserted region.

Operations have already commenced, and the *lead ore* is even richer than was anticipated.

CURRENT PRICES IN DERRY.

Oatmeal, ...	13	0	*to*	14	6	*per cwt of* 120lb.
Oats, ...	0	10	"	1	0	*per stone.*
Barley, ...	1	0	"	1	4	
New Potatoes,	0	4	"	0	6	
Beef, ...	0	3	"	0	5	*per pound.*
Mutton, ...	0	3	"	0	5	
Veal, ...	0	5	"	0	7	
Butter, ...	0	8	"	0	10	*per pound of* 18 *ozs.*
Flax,	45	0	"	56	0	*per cwt. undressed.*
Five hank yarn	2	9	-	3	4	*per spangle.*
Four, do. do.	2	7	-	2	10	
Three, do. do.	2	8	-	2	11	
One, do. do.	2	0	-	2	8	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton
by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. II.—NO. 38. WEDNESDAY, 11th AUGUST, 1824. Price 2d.

For the N. W. Society Magazine.

Bandon, August 2d, 1824.

MR. EDITOR,

We in the South of Ireland esteem you in the North as a half century before us, in civil and religious independence, and consequently, in education and civilization, the parents of industry, which, when thus nurtured, ever secure good order, comfort, and happiness. The N. W. Magazine, like the Mechanic's Magazine, in England, is calculated to spread among the poorer many, knowledge which was formerly accessible only to the richer few. Knowledge is like money, and money is like manure, it does no good until it is spread. A publication like your's resembles a step in the Temple of Wisdom, by which, if the divinity descend to her worshippers, they may also ascend to the divinity, and the most humble, practical man may communicate information to those above him, while higher minds reduce his practices into fixed principles of the philosophy of life. A cheap journal being such an organ of communication, must have the hearty good wishes of every friend of the people: to evince this feeling practically, I shall now and then occupy a few lines of your print, and, if I communicate but little of value, consider the humility of my preface, and that my poverty, not my will, restrains the pen.

In volume 34, page 362, of the London Journal of Science and Arts, is a paragraph, on the application of Muriate of Lime as a manure, from which I send you an extract.—M. Dubuc, a druggist and member of the Academy of Sciences, at Rouen, has, during the years 1820, 21, 22, and 23, made use of the chloride of calcium as a manure, or according to his own expression, as a vegetable stimulant; his experiments have been numerous and satisfactory, and in the above journal, where they are noticed at some length, their result fully established the utility of this application. As I perceive that you pay us the compliment to make extracts from the Munster Farmer's Magazine on the above subject, I beg to refer you to vol. 6th, page 150, at the bottom, article Saline Manures, where the following paragraph occurs—" We have reason to believe, from some experiments we have made, that in addition to the soda supplied *by decomposition in mixing lime and solution of common salt*, the muriate of lime, that is formed by a portion of the lime employed in the process, and the muriatic acid from which the soda is separated, is likewise a valuable manure. Should this conjecture be well founded, the common salt, which, in its undecomposed state seldom contributes to the fertility of land, is converted into two substances, each of which promotes, in a high degree, the growth and nourishment of vegetable productions." Thus we have the Editor of the M. F. M. who is an Irish practical farmer, predicting, in 1818, from observation, a theory which a French philosopher puts forward as new in 1823.—We have ever been famous, perhaps I should rather say infamous, for neglecting what we have at home, or only running after it when recommended by a travelled sanction. Irish invention is as active as French, and this new manure we may claim as a native discovery. I have one word more to say, on looking about us at home, where should you look for Irish Topographical History, of such importance to farmers? Irish collections have English Scotch, Welsh, nay even New South Wales descriptions; but on the green Island we are poorly supplied—our interesting country is too common to awaken the feelings in Irish breasts, while every traveller visits her shore with zealous curiosity; the natural history too of our woods, our waters, and our plains, fraught with intelligence respecting the food of our hungry, and the clothing of our naked, is but little known. Beneath the soil lie our metals, our coals, and our jewels. A few feeble attempts to bring them up to enrich us, are all that have been made; how long shall it be said, that Ireland is a country where God has done much, and man scarcely any thing. It would seem as if enchantment guarded her treasures, and the inhabitants were spell bound from even enquiring into her capabilities. To the N. W. Magazine, it will be a duty to point out what may be done in mines, manufactories, fisheries, and all the wild wealth of an untamed soil. Your's,

CULTIVATOR.

We feel exceedingly gratified by the above communication, and hope our readers will agree with us in thinking it interesting and valuable. The chemical terms which occur need not alarm nor disgust the unlearned reader. The mixture of a little quicklime with brine made of common salt is no very difficult matter. The change produced by this combination, it is affirmed, presents us with two new substances very different from the original ingredients. Chemists for their own convenience have given these new substances names which serve to distinguish them, viz. chloride of calcium and soda; and these are found to be excellent manures. A difficulty may here be started as to the relative quantities of lime and salt proper to be used. This, we should conceive, may be ascertained with sufficient accuracy by tasting the compound. If the taste of salt prevails, let a little more lime be added, and vice versa.

The copy of the London Journal of Science to which we have access has not reached farther than the 17th vol. We suspect our correspondent has mistaken the number. We have found a great deal of good practical information in some early numbers of the Munster Farmer's Magazine, which a friend has been so kind as to send to us. We have not seen the 6th vol. above alluded to, nor any of the later volumes. If our worthy correspondent can afford us farther information on the subject of this article, or on any other connected with the views of the N. W. Society, he will be contributing to the public good, and conferring an obligation on the

EDITOR.

BANNOW SCHOOL.

We have visited this very useful establishment, and in our humble opinion, it answers completely to the excellent account given in the 4th number of this volume. A number of the senior boys who were examined in arithmetic and mathematics, reflected very great credit on their teacher, by the admirable accuracy and promptitude of their answers.

EDITOR.

To the Members of the N. W. Society.

GENTLEMEN—One of the most active of our Irish members of Parliament has pledged himself to introduce, as early as possible in the next session, a bill for conferring on us another boon—the benefit of the English *poor rates*, that our peasantry may enjoy the hope, at least, of an approach to the happy state of men of their rank in England.—You must have observed of late, that the gentlemen who are entrusted with the care of Ulster in Parliament are not repressnted, in the public papers, as taking a very prominent part in what goes on; and if they do not allege in their excuse a want of instructions from their constituents, such is, at least, the only excuse which can be made for them. The consequence, however, of the usual course of Irish legislation has been unfortunate of late for Ulster, nor do I recollect a single law, which has been passed within the last half score of years, which has not made things worse than they had been before. You, gentlemen, should enquire into the nature of these poor rates—you should collect all necessary information for your representatives, and give them full instructions, that they may not appear briefless at the trial of the question, to which the promised motion of Mr. Hutchinson may give rise. Nothing, since the measure of the Union, has been agitated of equal importance—nothing which merits so mature consideration. The report of the select committee, appointed in the last session to enquire into the management of English poor rates, and which bears date June 4, 1824, is well worthy the attention of all who wish for their introduction here; and of all whose fancies dwell with pleasure on the comforts of the lower orders in England, and with grief and pain upon the comparative wretchedness of Irish labourers. What will they think, when they find it reported by this committee—"That in some districts able bodied labourers are sent round to the farmers, and receive a part, in some instances, the whole of their subsistance from the parish, while working on the land of individuals—obliging the parish to pay for labour which ought to have been hired and paid for by private persons, and converting the steady, hard-working labourer, employed "by agreement with his master, into the degraded and inefficient pensioner of the parish. What will they think of the report, that persons who have no need of labour, are obliged to contribute to the payment of work done for others—that the character of the labouring class has been degraded, so that able bodied men are slovenly at their work, and dissolute in their hours of relaxation, that fathers are negligent of their children, children do not think it necessary to contribute to support their parents—that the employers and employed are engaged in perpetual quarrels, and the pauper always relieved is always discontented—that crime advances with increasing boldness, and the parts of the country where this system prevails, are in spite of gaols and laws, filled with poachers and thieves? In some counties wages are five shillings a week—in some they have been and are so low as three." From this portion of the report, I shall not trouble you with further extracts, but beg to express my hopes, that the entire shall be inserted in the N. W. Magazine. I am also anxious that the Statistical Report of your District shall be hastened into light, that you shall, individually and collectively, contribute to make public a faithful account of a country so little known, so well deserving to be known—now particularly, when all men agree in the sentiments professed by the Irish Farmers' Journal, in the following passage—"The British Parliament has been prorogued by his Majesty in person, after a session unusually short, but which has been productive of much good to this part of the empire. We have always professed the highest opinion of the constitution of the British government, and let people rail as they please at places, pensions, and other instances of what they term corruption, we still think, that even amongst those who possess these good things, the greatest sin they have to answer for, is *ignorance.* In a word, we believe the condition of Ireland is very ill understood on the other side of the channel; and consequently that erroneous ideas founded on long continued prejudice, have been, and are at this moment, entertained with respect to the capabilities of the country, and the natural disposition of its inhabitants.—To be known is all we want—to have our grievances, real or imaginary, enquired into, is all we desire; for we feel confident, that the best exertions, both of the legislature and of the executive government, will be freely and chearfully given, to further the prosperity of the country in every possible way." Assenting to all the opinions here expressed, I call on you to do your part, to make our situation known. I call on you to collect the necessary information for your representatives, to communicate it, and to require that they shall turn it to a good account. But let me warn you against expecting mighty matters from Parliament, even when it shall be freed from ignorance. Except a fair proportion of the public funds, which government allots for purposes of public improvement, confine your claims to being let alone. If there is any thing clear in political economy, it is, that local matters are managed in the best way by persons locally interested—and can by such alone be managed well. The report, from which I have given copious extracts, to prove that England has not got so far before us in the way of prosperity as is commonly imagined, will furnish us with reasons for believing that Parliament can not do all things, nay, in spite of its omnipotence, little, without the zealous co-operation of the people.—Thus is it worded—"It appears to us quite impossible to frame any act on this subject which shall meet every case, *but a general sanction* might be extremely beneficial; and the following form appears to us as unobjectionable as any. The parishioners in vestry shall, if they think fit, draw up rules and regulations for the maintenance of the old and impotent, and other poor unable to work, as also for the employment of the able poor—and the same, signed or agreed to by a majority in value, shall be presented to the justices, to be by them amended, approved, or rejected, or sent back for alteration, and when adjusted to the satisfaction of the justices and parishioners, to be a parochial law for one year."—Here is an open, plain avowal from Parliament itself, of impotence to remedy a local grievance, and an acknowledgment that all that can be done is, to give a sanction to the free exercise of the sense and public spirit of the people. Do you, gentlemen, exert yourselves to cultivate this sense and public spirit. Lean for sure support upon yourselves.

An account of the improvements on the estates of the Marquess of Stafford, &c.

(Continued from page 296.)

The houses were placed lengthways, sloping with the declination of the hill. This position was chosen, in order that all the filth might flow from the habitation without further exertion on the part of the owner. Under the same roof, and entering at the same door, were kept all the domestic animals belonging to the establishment. The upper portion of the hut was appropriated to the use of the family. In the centre of this upper division was placed the fire, the smoke from which was made to circulate throughout the whole hut, for the purpose of conveying heat into its furthest extremities. The effect being to cover every thing with a black glossy soot, and to produce the most evident injury to the appearance and eye-sight of the inmates. The floor was the bare earth, except near the fire-place, where it was rudely paved with rough stones. It was never levelled with much care, and it soon wore into every sort of inequality according to the hardness of the respective soils of which it was composed. Every hollow formed a receptacle for whatever fluid happened to fall near it, where it remained until absorbed by the earth. It was impossible that it should ever be swept; and when the accumulation of filth rendered the place uninhabitable, another hut was erected in the vicinity of the old one. The old rafters were used in the construction of the new cottage, and that which was abandoned formed a valuable collection of manure for the next crop.

The introduction of the potato in the first instance proved no blessing to Sutherland; but only increased this state of wretchedness inasmuch as its cultivation required less labour, and it was the means of supporting a denser population. The cultivation of this root was eagerly adopted; but being planted in places where man never would have fixed his habitation, but for the circumstances already mentioned, this delicate vegetable was exposed to the inclemency of a climate for which it was not suited, and fell a more ready and frequent victim to the early frosts which frequently occur in August, than the oats and bear. This was particularly the case along the course of rivers, near which it was generally planted on account of the superior depth of soil. The failure of such a crop brought accumulated evils upon the poor people in a year of scarcity, and also made such calamities more frequent. For in the same proportion as it gave sustenance to a larger number of inhabitants when the crop was good, so did it dash into misery, in years, when it failed, a larger number of helpless and suffering objects.

As often as this melancholy state of matters arose, and upon an average it occurred every third or fourth year to a greater or lesser degree; the starving population of the estate, became necessarily dependant for their support on the bounty of their landlord; AN APPEAL WHICH WAS NEVER MADE IN VAIN. This relief was by no means confined to those who held immediately of the chief. It was claimed by every individual on the estate.

So long as the system just described remained in full force, no attempt could be made to improve the situation of these poor people. To better their condition however; to raise them from such a state of continual poverty and occasional want; to supply them with the means, and to create in them the habits of industry, was and is the bounden duty of the owners of every such property. And it was not less their duty to do so, because the same arrangement, which was calculated to produce this salutary effect, was at the same time the best suited to increase the value of their property, and to add to the general wealth of the community. The greater the means, and the more extensive the influence of the proprietors, the more they were called on for exertion, as well for the sake of their own people as an example to others. None felt the full extent of this obligation more than the proprietors of the estate of Sutherland. But such an attempt was not to be undertaken without much consideration; and when fully determined on, it was not a matter to be easily accomplished.

No country in Europe ever presented more formidable obstacles to improvement, arising out of the prejudices and feelings of the people themselves. To the middleman the proposed change could be by no means agreeable. Its effect being to alter his condition, and remove him from a state of idle independence, in habits almost of equality with his chief, to a situation, though equally respectable, yet one in which his livelihood was to be obtained by his exertions and industry, and in many instances by an application to pursuits considered beneath a gentleman, although leading to real independence and wealth, such as he never could have attained, in his original condition. Nor could it be agreeable to him to lose that command and influence, which he he had hitherto exercised without controul over his sub-tenants. Several persons of this description accordingly did endeavour to excite by the most malignant misrepresentations all the opposition which could be mustered. From selfish motives, regardless of the happiness of the people, whose improvement it was the great object of the landlord to effect, they affected to stand up in favour of a set of people who never before had experienced their compassion, and whom, in reality, they wished to bring down to that state of degradation from which they had been just emancipated. This was however by no means true of the whole or of the greater number of this class of gentlemen; for in general the most active improvers of Sutherland are natives who both as sheep-farmers and as enterprising agriculturists, are equal to any in the kingdom. With an intelligence and liberality which reflects upon them the highest honour, they have embraced with alacrity the new scene of active exertion presented for their adoption; seconding the views of the landlords with the utmost zeal, prudence, and foresight.

So strong however were the prejudices of the people, that even to those who were subjected to the tyranny of the tacksman, this mode of life had charms which attached them strongly to it. The middleman extended, in some degree, to the more respectable of his inferiors, the same familiarity which he himself received from the chief. The burthen of the out-door work was cast upon the females. The men deemed such an occupation unworthy of them, continued labour of any sort being most adverse to their habits. They were contented with the poorest fare. Like all mountaineers accustomed to a life of irregular exertion, with intervals of sloth, they were attached with a degree of enthusiasm only felt by the natives of a poor country, to their own glen and mountain side, adhering in the strongest manner to the habits and homes of their fathers. They deemed no comfort worth the possessing, which was to be purchased at the price of regular industry, no improvement worthy of adoption, if it was to be obtained by relinquishing the customs, or leaving the homes of their ancestors. So strongly did these feelings operate, that it cost them nearly the same effort to remove from the spot in which they were born and brought up, though the place of their new dwelling was situated on the sea-shore, at the mouth of their strath, or even in a neighbouring glen, as if they had been emigrating across the Atlantic.

The cattle which they reared on the mountains, and on the sale of which they depended for the payment of their rents, were of the poorest description. During summer they procured a scanty sustenance with much toil and labour, by roaming over the mountains; while in winter they died in numbers for want of support, notwithstanding a practice which they universally adopted of killing every second calf, on account of the want of winter keep. To such an extent did this calamity at times amount, that in the spring of 1807, there died in one parish 200 cows, 500 head of cattle, and more than 200 small horses.

W. Young, Esq. superintended the commencement of the improvements in the estate of Sutherland. The utmost caution and deliberation were required in struggling with and overcoming the various obstacles which stood in the way, and never were plans more maturely weighed, nor executed with more anxiety and tenderness. The new-modelling and arrangement of these extensive possessions was rendered much easier, in consequence of the public works set on foot under the direction of the parliamentary commissioners.

The change which long before had taken place on the borders of the two kingdoms was that which was to be the object for imitation. The proprietors there had formerly removed the wretched population from these tracts and covered the mountains with sheep. Not only had they this example as their guide, but the West Highlands of Scotland had given a still farther proof of the advantage of this kind of management.

The succession of those Alpine plants which are common in the Cheviot hills when under sheep, being also the natural herbage of the mountains of Sutherland, renders them very suitable to this mode of occupation. On the first melting of the snow, the cotton grass is found to have been growing rapidly; it forms a healthy and abundant food for sheep, until about the beginning of May at which time it is in seed; when after a short time the deer hair takes its place, starting up almost instantaneously, and forming, in the course of one week, (if the ground has been lately burnt and the weather be favourable) a green cover to the mountains. This with several kinds of bent, grows until the end of July, when the cotton grass again begins to spring, and with the pry moss, comes a second time into flower, in September, after which the heather and more heating plants continue until the frosts of winter.

As there was every reason therefore for concluding that these mountainous regions, were as much calculated for the maintenance of stock, as they were unfit for the habitation of man, there could be no doubt as to the propriety of converting them into sheep walks, *provided* the people could be at the same time, settled in situations, where by the exercise of their honest industry, they could obtain a decent livelihood, and add to the general mass of national wealth, while they might not be exposed to those privations which so frequently and so terribly afflicted them, when situated among the mountains.

It had long been known that the coast abounded with many different kinds of fish, not only sufficient for the consumption of the country, but affording also, a supply *to any extent* for more distant markets, or for exportation, when cured and salted. It seemed as if it had been pointed out by nature, that the system best for this remote district was to convert the mountains into sheep-walks, and to remove the inhabitants to the coast or to the vallies near the sea.

The object aimed at was two-fold; in the first place to render these wilds contributory to the general wealth and industry of the country, and that in the manner most suitable to the situation and circumstances of the country. This was to be effected by making it produce a large supply of wool for the staple manufacture of England—while at the same time it should support a numerous, and a far more laborious and useful population, than it had hitherto done at home. And in the second place, to convert the inhabitants of those districts to habits of steady industry, and to enable them to bring to market a very considerable supply of provisions for the large towns, or for foreign exportation.

(To be continued.)

ON THE TURNIP FLY OR BEETLE.

(From Evans and Ruffy's Farmers' Journal.

Sir—Having been for many years a subscriber to your useful Journal, and having at this season observed that a considerable correspondence invariably takes place from various quarters upon this subject, I have been surprised that the agriculturists should have been so much at a loss how to protect this plant. As a practical farmer of no small extent, I wish to inform the public, through your Journal, of the plan which I have adopted for these last fifteen years, and ever with complete success. After sowing turnips, and I never sow any but Swedes, which the fly or beetle are most fond of, I always procure lime ready for them as soon as they make their appearance; and when the plant is pretty well up, and still in the smooth leaf, I pulverize the unslacked lime, and in the night time have about six bushels of this lime, scattered from a trug, on every acre; should rain come before the plants are safe, I repeat it. This I have found to be a complete preventative against the destructive ravages of this fly or beetle. I must here observe, that I consider my land as much subject to the fly or beetle as any whatever, and I believe in no one year should I have raised a crop of turnips without pursuing this method. The expense of this is trivial: having the lime properly slackened, I find a man will cover about four acres in a day or night, but I much prefer the night, on account of the dew. And as a practical farmer, I beg to observe that Mr. Sutton's plan cannot be acted on beneficially, on account of the long delay between the preparation of the land and the sowing of seed, as all stiff soils would become adhesive, and freer soils full of weeds.

I am, Sir, your's, &c.

EAST SUSSEX.

PARING AND BURNING COARSE LAND.

Having seen, in your paper of the 5th of March, paring and burning recommended, I send you the following remarks on that subject, which are at your service if you wish to publish them.

I have always considered paring and burning the surface to be the most economical, best and quickest method to bring waste swampy ground, or dry barren heaths, into cultivation, and therefore commenced in February, 1822, to pare a tract of 20 Scotch acres, consisting in part of moss, part of swampy clay earth, covered with strong heath, bushes, and ling, and a third portion, a light moor, covered with short heath and little grass, the whole worth, on an average, about 2s. 6d. per acre. Owing to the continued rains of March and April, I could not set fire to the parings until the 5th of May; but previous to the 1st of July I had the entire burnt, and about 13 acres planted on the ashes, first ploughing the seed bed.

From the late time of planting, the crop did not make so good a return as I was led to expect whilst growing, but still sufficient to induce me to try the experiment again in 1823—when I had a large steep dry hill of 14 acres (covered with heath and coarse grass worth about 7s. per acre) pared, and from the dry winds in March and April, I was enabled to burn the parings early in the latter month, and have all the potatoes set and shoveled by the 28th May. The crop fully answered my expectation, and far exceeded the generality of the farmers' crops in the neighbourhood, that were planted on dung.

The following is the result of the experiments as above alluded to:—

EXPERIMENT NO. 1—1822.

Paring 20 acres at 36s.	£36	0	0
Burning ditto at 9s.	9	0	0
Ploughing seed bed, 3 bouts plough, 13 acres,	5	17	0
Planting, dropping seed, spreading ashes, and shoveling potatoes at 44s. for 13 acres,	28	12	0
39 bows seed at 8s. 4d.	16	5	0
Cutting 39 bows at 10d.	1	12	6
Digging 13 acres, at 25s. per acre,	16	5	0
1823——Ploughing 7 acres, not potatoes	3	10	0
1000 barrels of lime, being at the rate of 50 barrels per acre,	50	0	0
120 bushels seed oats, at 3s. 6d.	21	0	0
Sowing, harrowing, and water furrowing,	8	0	0
Two years' rent at 2s. 6d.	5	0	0
	£201	1	6

CONTRA.

260 bolls potatoes, being 20 bolls per acre, at 8s. 4d.	£108	0	0			
20 acres of prime oats, valued by 3 farmers at 8*l.* 10s. per acre	170	0	0	278	0	0

Thus leaving a clear profit of £76 19s. 6d. upon two years' labour, and the ground improved in value from 2s. 6d. to 18s. I have this present year sown it with potato oats and grass seed.

EXPERIMENT NO. 2—1823.

Paring 14 acres at 36s.	£25	4	0
Burning ditto at 9s.	6	6	0
Spreading ashes, dropping seed, planting, and shoveling, at 2*l.* 13s. 4d.	39	12	4
Nicking out ridges to angle hill	1	10	0
Forty-two bows seed at 8s. 4d.	17	10	0
Cutting	1	15	0
Digging at 30s.	21	0	0
One year's rent of 14 acres at 7s.	4	18	0
	117	15	4
324 bolls potatoes, at 10s. being 23 bolls per acre,	162	0	0

Leaving a clear profit of £44 4s. 8d. upon one year—rather more than £3 per acre.—The cause of the planting and digging being so much less in No. 1 than in No. 2 is, that the former was quite free from stones, and the latter like a quarry in some parts. The expense of paring was much greater for those experiments than it should have been, but the only person I could get to commence, was a county Down man, at 36s. the Cunningham acre—but this season I have had about 25 acres pared very completely by some of my own labourers (for whom I got the necessary implements,) at 20s. the same measure.

Although an advocate for the system of paring and burning in reclaiming coarse grounds, I should be sorry to see it introduced as it has been in the west of Ireland, upon improved lands, conceiving that it tends rather to impoverish than improve the light arable lands of this country.—*Ulster Mechanic.* *April* 21, 1824.

CURRENT PRICES IN DERRY.

Oatmeal,	...	13	0	*to*	14	6	*per cwt of* 120lb.
Oats,	...	0	10	...	1	0	*per stone.*
Barley,	...	1	0	...	1	4	
New Potatoes,		0	4	...	0	5	
Beef,	...	0	3	...	0	5	*per pound.*
Mutton,	...	0	3	...	0	5	
Veal,	...	0	5	...	0	7	
Butter,	...	0	8	...	0	10	*per pound of* 18 *ozs.*
Flax,		45	0	...	56	0	*per cwt. undressed.*

ON THE ECONOMY OF FEEDING HORSES.

(From the Transactions of the Highland Society.)

(Continued from page 292.)

The following winter, 1814, I began whin feeding on the 4th of November; my work horses had now been reduced to three pair, and the whole number of my horses was eight. I determined, therefore, to increase the quantity of whins given to each, having it in my power to do so, without increasing the number of hands employed in the preparation of it. To each of six work horses, I gave 28 lib. and from 20 to 22 lib. to the other horses. I now wholly withdrew their oats, during the short days; and when spring work commenced, gave only half the former allowance, or 3 lib. 2 ozs. For a part of this spring, one half stone of hay was given in place of straw, not from any idea of the necessity of such change, but because my straw was unusually scarce; and I had saved the whole hay of the former season. The condition of the horses was certainly equal, perhaps superior to what it had been during the former winter. The quantity of corn withdrawn, appeared to be more than compensated by the additional 10 lib. of whins.—This feeding was continued, as in the former seasons, till the month of March. I have always found, that the horses begin to show a distaste to the whins about the commencement of spring. The shoots probably lose something of their succulence, or become less palatable from other changes which at this season the vegetable undergoes; and I watch the first indications of this, to leave them off, and to supply their place with Swedish turnip.

It were unnecessary to particularize the experience of the succeeding winter, 1815. It corresponded in every respect with what I have already stated. The whin feeding was commenced in the month of October, continued till the usual season, and was attended with the same satisfactory result. It is now as regular a part of the routine of the farm, as giving clover in summer, and turnips in winter.*

The expense which attends this mode of feeding, may be estimated in the following manner, taking that of 1815, when I had carried it to the full extent.

Prior to beginning February.

Wages of a woman cutting per day	£0	0	6
Ditto of a boy employed in driving and bruising also 6d. but one third of the day at other work,	0	0	4
Supposed keep of the mule 6d. also deduct as above	0	0	4
Eight stones straw	0	2	0
Or 4¾d. for each of 8 horses	£0	3	2

After beginning February.

Wages of a woman cutting two thirds of a day for horses†	£0	0	4
Ditto of a boy, one half do. for do.	–	0	3
Keep of a mule one half day	–	0	3
25 lib. oats	–	2	6
Eight stones straw	–	2	0
Or 8d. each horse	£0	5	4
But where hay is given, add 4 stones at 1s. and deduct 4 stones straw	0	3	0
	£0	8	4

Being 1s. 0½d. each horse.

(To be continued.)

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* The only addition I made this year, 1815, to my experience in this useful branch of farm economics, consisted in trying the whins, both in fattening and young cattle. I found, that although the quantity of whins cut by the woman in the short winter day, did not much exceed 1½ cwt. yet in spring, both from the greater length of the day, and the diminished severity of the weather, she cut nearly 3 cwt. and I now bruised and gave the remainder, after feeding my horses, (being nearly one half,) to the cattle. Both those at stall, and the cattle in the courtines, ate it greedily; but I did not pay such particular attention to this application of it, as enables me to state what saving of other food might be produced. Indeed, in the feed of thirty or forty head of cattle, it must necessarily have been quite immaterial. However, after I ceased this feeding with the horses about the usual time, (viz. the beginning of March,) I continued to collect and bruise the same quantity; and it was wholly given to the cattle. They continued to eat it for about a fortnight after the horses, and then began to show the same distaste to it, only picking particular parts, and leaving much of it: when I saw this it was withdrawn.

† The rest of the day's work being allowed for the portion of whins given to the cattle.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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Some of our readers are aware that an arrangement is in progress to obtain Grocers' Hall for the purpose of establishing an Agricultural Seminary. That arrangement there is good reason to expect from the well-known liberality of the Grocers' Company, will meet with every facility on their part. The members of the N. W. Society, therefore, eventually will have to deliberate on the outlines of a plan, such as will be likely to secure most effectually the improvement of the youth of this District, so far at least as regards that portion of the community engaged in agricultural pursuits. With a view to revive attention to this very important subject, it has been suggested by some leading members of the N. W. Society, that the account, formerly inserted in the Magazine, of the Bannow School, should be re-printed and circulated—which is done accordingly, and accompanies the present number. That Seminary, so far as it goes, appears to be of a very superior description—but as the Institution proposed to be erected in this country, is to be on a larger scale, there will be an opportunity of giving to the pupils more ample employment in the latter than can be given in the former. There may be room, also, for a superior and inferior department, so that suitable treatment and instruction may be provided for those born with the advantages of fortune, as well as for those who are destined for the humbler walks of life.

ON THE ECONOMY OF FEEDING HORSES.

(From the Transactions of the Highland Society.)

(Continued from page 304.)

I have thus endeavoured to detail four years' experience of a practice in husbandry, which, though not altogether new, has certainly not hitherto met with the attention it deserves; nor am I aware that any individual has yet prosecuted it to the same extent I have done myself. It has, however, within the last two years, been adopted on a scale of great magnitude, and in a situation where its advantages were highly conspicuous. The forag used by the Regimental horses of the British army under the Duke of Wellington while in the north of Spain, and in the Pyrennees, was chiefly whins, on which they were found to thrive remarkably; the whins were collected by the men, and either bruised between two stones, or pounded in a trough.*

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* *Extract of a Letter from Lieut.-Col.* Macgregor, *9th Foot, dated Elgin, 29th October,* 1816.

'I cannot answer your queries respecting the use of 'whins within the period you mention, not having been 'with the army at the time they were so much made use 'of. I can only tell you generally, that the horses of the 'army were chiefly subsisted on them when it was station'ed in the north of Spain and the Pyrennees; and they 'were found to thrive upon that kind of food. I presume 'it to have been confined to the bat horses, and those em'ployed with the infantry regiments and artillery. The 'cavalry probably, that is, the great body of them, were 'stationed in districts where there was no occasion of devi'ating fron the customary food. If I recollect right, the 'whins were made use of in the same manner by the army 'in the south of France, in the neighbourhood of Bayonne. 'But as to the mode of preparation, or satisfactory answers 'to the queries you state, I am not prepared to speak, my 'information being entirely from hearsay.

'But I shall transmit the queries to a friend, who was 'with the army at the time, and who I think likely to afford 'the information you want.'

Extract of a Letter addressed to Lieutenant-Colonel Macgregor *9th Foot.,*

'The whole of the regimental horses and mules of the 'division were fed in this way (viz. on whins); the quan'tity they ate, I cannot say; it was mostly given them at 'night, when doing them up; and, I think, as much as 'they would eat during the night. They occasionally got 'a small allowance of corn; and were turned out to browse 'the whole of the day, when not wanted; but what they '*then* picked up, considering the time of the year (winter), 'and the numbers feeding nearly on the same spot, and for 'a continuance, could not have affected them much in point 'of nourishment. The period during which whins consti'tuted the principal part of the animals' food, was from 'October to March. During a great part of the time of 'feeding them in this way, they had but little work to do, 'and improved in condition, having fallen off much before 'by their great fatigues and privations. They had previ'ously been fed on the usual forage of straw, &c. &c.; but 'always uncertain as to quantity, and often without any. 'Rest, I think, must have greatly assisted in getting them 'into condition, while on whins.—At the time of the year 'when forage is scarce on the frontiers both of France and 'Spain, the natives feed their horses and mules on whins; 'and in every house a trough with a heavy mallet is found, 'for preparing it. It is the green shoot of the whin that

I have no doubt but the rude machinery which I employ for the purpose of bruising, may admit of much improvement. Two attempts at this have fallen under my own observation; the one, an apparatus for this purpose, attached to a thrashing-mill; the other, a bruising-mill, to be driven by the hand; but, in both instances, the attempt has been unsuccessful; and the operation was found to be very imperfectly performed by either instrument. I therefore adhere to the plan of a bark-mill, originally adopted, only having substituted, in place of the old millstone, a stone of much greater weight and thickness. which is still drawn with perfect ease by the mule. The diameter of this stone is four feet two inches, and its thickness, which is uniform throughout, is 17 inches.

Having stated that it is only for a part of the year, viz. from the beginning of November to the month of March, that I practice this method of feeding working stock; it may be proper that I give some further account of the manner in which their feeding is conducted during the rest of the year, and that in the order in which it is pursued.

The whins are succeeded by Swedish turnip, as the principal constituent of daily food. I have tried giving this food steamed, and mixed with chaff; but I am not sensible of any advantage which attends this practice. Steaming or boiling Swedish turnip appears to be attended with an effect directly opposite to that produced by steaming or boiling potatoes. These lose their moisture by condiment, that of the turnips is apparently increased by it; but I look upon Swedish turnip given raw, to be one of the most useful articles in the food of working stock, and affording a cheap substitute for much of the hay and corn usually consumed for this purpose.

The quantity of this root consumed by a feeding ox is very considerable. A bullock, which will feed to 40 or 45 stones Dutch, will consume 1½ cwt. per day. A work-horse, with a moderate allowance of corn, and with either straw, or a small allowance of hay, will not be found to consume more than about 30 or 35 lib. Now the bullock will, on the above feed, gain nearly at the rate of 1½ lib. beef per day; which makes the value of a hundred weight of Swedish turnip the same as a pound of beef, say 6d. Taking this as the value of Swedish turnip, the expense of feeding 8 horses would be as under.

2½ cwt. Swedish turnip	£0	1	3
50 lib. oats	0	5	0
Straw as before	0	2	0
Or nearly 1s. 0½d. per horse	£0	8	3

The increased allowance of oats I conceive to be indispensable; because, from the hard nature of the Swedish turnip, a horse has not time to consume a sufficient quantity to make up for the want of corn. The turnips ought always to be well washed and sliced. Were they given whole, a horse would not eat more than 15 or 16 lib. in the whole night.

This feeding I continue as long as the Swedish turnip lasts; which is generally to the very end of May, sometimes longer.*

When the Swedish turnips are finished, potatoe feeding commences. The potatoes are invariably given steamed. The means used for this purpose are now so universally known, that any description would here be unnecessary.†

'is cut, may be about a foot in length, or more, and placed in this trough (which is generally the bottom of a tree scooped out, and of very hard substance), and then beaten with the mallet, until it is completely mashed, so that you may rub it in your hand like bran, and the prickly heads quite pounded away. It is a very laborious employment, which our grooms were heartily sick of.—Feeding on whins, it is said, will give the horses worms or botts: Be that as it may, almost every one of the regiment were so affected; but whether from the whins, or from former bad food, and privations, which make animals eat any thing they can pick up, is hard to say;—the latter is my opinion;—and I consider the whins, when given mixed up with corn, or straw and hay, to be good food, and such as ought to make them do their work. On the army advancing to Bayonne, the animals did their work well.'

Should any such idea exist, that whins are an unwholesome food, I can add to the judicious opinion expressed by the writer of the above letter, a very satisfactory testimony. During the last five years, it has been my uncommon good fortune never to have had a sick horse in my stable. I do not infer from this, that whin-feeding affords an antidote to all diseases; but it is at least proof that it predisposes to none.

* The Swedish turnips are kept in the usual manner; being drawn in winter, they are deposited in long rows, between two sheep flakes, supported so as to hang outwards. The turnips are drawn to a ridge at top above the flakes, and slightly covered with drawn straw.

The whole produce of 15 acres of Globe, Yellow, and Swedish turnip, crop 1816, were stored in this manner.

† The particular apparatus, which I have used for 10 years, and believe to be as simple, cheap, and efficacious, for a farm of moderate extent, as any I have seen, has been described in a Communication to the Farmer's Magazine, No. XLIII. for August 1810.

The quantity of potatoes given to each horse, is 32 lib. avoirdupois per diem ; and the expense of this mode of feeding may be given as under.

The provincial boll, to which I have before alluded, weighs 42 stones Dutch, or 45 stones 15 lib. avoirdupois. When potatoes are at 10s per boll, the price per stone, of 16 lib. avoirdupois, is to a very minute fraction 2¾d.

16 stone avoirdupois potatoes, at the above rate	£0	3	8
Steaming	0	0	8
25 lib. oats, as before	0	2	6
8 stones straw	0	2	0
Or nearly 1s. 1½d. per horse	£0	8	10

The above allowance of corn given with the potatoes, is more than equal to the double allowance given with the Swedish turnip ; for, however valuable the latter root may be, it bears no proportion to potatoes in the quantity of nutriment it contains. It is not necessary to resort to chemical analysis to ascertain the amount of this difference. The experience of feeding cattle will give a more accurate estimate of it than any analysis could furnish. A bullock of a good age, and moderately advanced in condition, will give three stones of beef for every ton of potatoes. Comparing this with the statement before given, of feeding on Swedish turnip, we ascertain that 46½ lib. weight of potatoes contains as much nourishment as 112 lib. Swedish turnip.—Hence it may be very safely alleged, that 32 lib. weight of potatoes, with 3 lib. 4 ozs. oats, is a more nutritious feed for a horse than 6 lib. 4 ozs. of oats, and any quantity of Swedish turnip along with it which a horse in regular work has time to eat.

Mr. Curwen, M. P. for Carlisle, to whom the world is indebted for much valuable precept, and still more valuable example, in the department of rural economy, has given a detailed account of his experiments on feeding working stock with steamed potatoes ; an account which first directed my attention to this most important branch of farm management. The object of his experiments avowedly was, to substitute potatoes for hay, rather than for corn ; and he has even denounced, against any attempt to supply the use of corn by potatoes, the penalty of certain failure.—I have, however, not been deterred from making this attempt. Nor do I think that failure was to be anticipated. There was in my opinion, good ground to infer, from a consideration of the relative qualities of the two vegetables, that potatoes might, in a great degree, be advantageously substituted for oats. A working horse, if fed on potatoes alone, will consume about 42 lib. per day. Now 42 lib. weight of potatoes will yield 12 lib. 7 ozs. of dry weight or flour. A Winchester peck of oats, the largest allowance a farmer would think of giving to a horse, supposing him to have nothing but oats and straw, weighs (of good oats) about 10 lib. which will yield about 5 lib. 13 oz. meal. Now, it is no unreasonable presumption, that 12 lib. 7 oz. of potato flour (which would yield 6½ lib. of starch) contains at least an equal, if not a considerably greater quantity of nourishment than 5 lib. 13 ozs. of oatmeal. But a farm horse working 9 hours a day, (and often ten hours during the turnip season), has not time to eat 42 lib. weight of potatoes with a proper quantity of straw. It is therefore advisable to give only 32 lib. weight of potatoes, and to substitute a small proportion of oats between yokings. Mr Curwen's practice is to give 21 lib. of potatoes and 8 lib. of oats. It appears to me, that he has thus stopt short of the full measure of advantage which was to be derived from a practice, of which he has so well illustrated the importance.

From the time that the potatoes are done, which always last till the middle of July, often till the 1st of August, the horses are kept on the usual feed of clover and tares. I have sometimes given green buck wheat ; but prefer either of the others. Along with the clover, &c. the horses generally get a feed of 3 lib. 2 oz. oats ; and this mode of feeding continues till the commencement of the whin feeding.

I now conclude this account, by an estimate of the annual expense of feeding working horses according to the plan detailed.

From 1st November to 1st February, at 4½d. per day—(Whins)	£1	16	5
From 1st February to 15th March, at 8d. do.	1	8	8
From 15th March to 15th May, 1s. 1½d.—(Swedish Turnip)	3	2	6
From 15th May to 20th July—(Potatoe feeding)—at 1s. 1½d.	3	12	10½
From 20th July to 1st November—(Clover, Tares, &c.)—at 11½d.	5	0	10½
Expense of feeding 1 horse *per annum*	L.15	1	3½

According to this method of feeding work-horses, a saving is obtained of at least half the usual expense, calculated to be incurred in this department of farm-management, in the more improved districts of the country. I should take little credit for this saving, if obtained, as it often is by such an abridgment of the labour required from horses, as is supposed to compensate for the poverty of their fare; a mode of management, which fairly considered, will be found more expensive than the highest and most extravagant feeding that can be given by the farmer. From the horses fed as I have described, a quantity of labour is obtained equal to the work of any farm horses in the kingdom; while, at the same time, their condition evinces that their food is fully adequate to the labour they have to perform.

An account of the improvements on the estates of the Marquess of Stafford, &c.

(Continued from page 302.)

These arrangements commenced in 1807, and have been carried on from that period as the different leases expired. Bad years and the failure of crops continuing to produce the same miserable effects they had constantly occasioned to that portion of the population, which still continued among the mountains. This calamity fell upon them with great severity, in the seasons of 1812-13 and 1816-17. During the latter period they suffered the extremes of want and of human misery, notwithstanding every aid that could be given to them through the bounty of their landlords. Their wretchedness was so great, that after pawning every thing they were possessed of, to the fishermen on the coast, such as had no cattle, were reduced to come down from the hills by hundreds, for the purpose of gathering cockles on the shore. Those who lived in the more remote situations of the country, were obliged to subsit upon broth made of nettles thickened with a little oatmeal. Those who had cattle had recourse to the still more wretched expedient of bleeding them, and mixing the blood with oatmeal which they afterwards cut into slices and fried. Those who had a little money came down and slept all night upon the beach, in order to watch the boats returning from the fishing, that they might be in time to obtain a part of what had been caught.

In order to alleviate this misery, every exertion was made by Lord Stafford—to those who had cattle he advanced money to the amount of above £3000. To supply those who had no cattle, he sent meal into the country to the amount of nearly £9000, besides money and medicines distributed in each parish under the eye of Lady Stafford or of the agent. The consequence of this accumulated distress had caused a very bad Typhus fever to prevail in 1818 and 1819, which was counteracted by a timely supply of bark and calomel.

If any doubt had remained of the propriety of the system adopted, the experience of this year certainly put that doubt to rest.—There could be no hesitation on the part of the managers, in strongly advising not only its continuance but its extension.

It was determined that the whole of the removals should be completed in the month of May, of the years 1819 and 1820 respectively, at which periods the tacks of a large portion of the estate expired, and notice to this effect was given in the end of 1817. In order to give the people every advantage, and to enable each of them to purchase a boat, or a share in one, and to proceed without difficulty in erecting their new houses, and in cultivating their new lots, all arrears were abandoned, and it was ordered that *their farms, during the last year of their occupation should be rent free*, provided they should settle in their new lots, with alacrity and without delay.—The amount thus given up and expended on the whole of these arrangements exceeded £15,000.

Notwithstanding the dilatoriness of some in occupying their new lots, by far the greater bulk of the people are now settled upon the coast, actively engaged in the cultivation of their land, and the prosecution of the herring fishery. In nine cases only was it necessary to enforce the law in removing the people. The tenants now all hold immediately of the landlord; the lots are all regularly laid together, to which is attached a hill pasture of a definite extent; each is answerable for his own rent. And he who is disinclined to work finds that he has no alternative between exerting himself or losing his land. They are bound to erect stone houses, in view of the roads, so that they will not only be constantly under the eye of the local management, but will gradually acquire industrious habits from their being placed near the great lines of communication through the country.

The account of the immense expenditure on roads and bridges, appeared in a former number of this work. The lots at first were made so large that the holders might have a comfortable support without being at all dependant upon the ocean for a livelihood.—But as the herring fisheries encreased, not only those who were settled upon the coast, but many young men belonging to the hills engaged annually in this occupation, so that many became proprietors or sharers of boats. It was no longer necessary, therefore, to make the lots on so large a scale as at the commencement. Indeed had this been so, one great object would have been entirely lost, for had the people subsisted altogether on their lots, they would never have gone to sea. Or if they became active fishermen, their lots must have been imperfectly cultivated. Even now, altho' they are of a size to induce every man to engage actively in the herring fishery, yet these two advantages combined provide so completely for the maintainance of most families, that few as yet have engaged in the cod or ling fishery.

An advantage of no ordinary nature will be obtained, by this concentration of the people on the coast; which is that the benefits of education and moral instruction can now be extended to all, which formerly could only be obtained by a portion. An additional advantage will be the destruction of the smuggling trade, which continued to exist in the mountains in spite of all the laws that were passed to check the evil. The extent of this illegal trade was very great, to the serious injury of the revenue. The effect of it however upon the habits and morals of the people, was a matter of much more importance. It nursed them up in every species of deceit and idleness, taught them habits quite incompatible with the customs of civilized life, adding greatly to those defects, which characterise persons living in a loose and unformed state of society. A want of openness and candour with an ignorance of the true value of these virtues, has always been remarked to exist among rude nations, and the prevalence of unsettled habits, brought those qualities into more dangerous and continual activity.—Living in this respect in the continued breach of the laws, it was difficult to convince them that they ought in other particulars to submit to their authority. And up to the latest date, the power and influence of the chief was so much more regarded than that of the law, that it was the common practice, to commit the execution of legal warrants to the agent on the estate. Among other bad consequences of this practice was, that when the sheriff was called on to decide in a dispute between landlord and tenant, and the judgment happened to be against the latter, the conviction on his mind was, that it was the power of the landlord, not the justice of his case that obtained the decision.

The progress which the earlier settlers have made in the improvement of their lots and in the construction of their houses is very striking and satisfactory. Cows and pigs no longer live under the same roof with their owners. The rearing of pigs has become an object of great importance, there being a considerable exportation of them, and the people are overcoming the prejudice which they entertained against the use of this food. To encourage the building of neat cottages, Lady Stafford offered premiums of £10, £5, 50s. 20s. to those who should build the four best cottages during 1819. The quantity of waste land taken in from the mountains is very great. At Gartymore, the industry of the people has brought into cultivation much land hitherto waste and covered with heath, bearing good crops of bear and turnips. The increasing wealth of these people has kept pace with their improvements. The surest means of judging of this fact, is by ascertaining that portion of their gains which they can afford to expend on superfluities. The extent to which this has increased among the seaside settlers is very remarkable. At the last Brora fair, an institution of a few years standing, there was spent in purchasing what are termed *fineries* the sum of £1500. Three of the merchants (chapmen) sold, each goods to the amount of £100. A baker sold confectionaries to the amount of £30.—

It is believed, that so rapid an improvement in the circumstances of a people never before took place.

Before leaving this subject, it may be remarked that there is no longer any sub-tenant on the estate. Services and payment in kind of every description have been abolished, in lieu of which money-rents on a moderate scale were substituted. Further arrangements have been adopted to prevent the evils which sub-tenantcy or a division of the lots would produce, by a continued and rapid multiplication of the numbers of the people. The tendency of the population to increase more quickly than the means of subsistence, is remarkable throughout the Highlands, and in this part of the country that tendency is increased by a powerful feeling in favour of early marriages. A principle in every respect most praiseworthy, and which strongly upholds the moral character of a people, when the family is maintained by the labour and exertion of the parents. But when looking to the gratuitous support of others, it degenerates into a selfish gratification of passion, in its consequences destroying every good principle of our nature. Which must be the case wherever the evils of a redundant population, and compulsory laws for their support exist.

It remains to be considered how far this part of the plan has answered the intended purpose, and to examine whether the increased productiveness of the country has justified the expectations formed in regard to this mode of management. The first change which occurs in these lands now become sheep-walks, is that all the haughs and holmes on the sides of the streams which were formerly cultivated, are covered with a sweet and luxuriant herbage. These districts are usually preserved to form winterings to hilly ranges adjoining them. The next alteration arises from the judicious draining of such swamps as will when freed from water become valuable; and from the construction of surface-drains conducted along the sides of the mountains, for the purpose of catching and conveying off the water into the different natural streams, without permitting it to lodge, or to do any other mischief.

It should be explained, that the complete drainage of these swamps is not thought of. All that is attempted is, to relieve the surface of the bog, of water to such a degree as to permit the natural herbage to grow up, and to support a sheep. It still remains impassable to a heavier and less active animal. It is thus evident, that a large portion of these mountainous tracts is rendered productive when applied to stock-farming, which under any other system of management must lie waste and unprofitable.

These sheep-drains have been executed to the extent of many miles on every stock-farm upon the estate. The effect of these drains, in conjunction with the burning of the heath, and the grazing of the sheep is to encourage the growth of the natural grasses which in time cover the mountains in place of heath, where the hill is at all of a kindly nature.—This change has been produced in Sutherland to a great extent, and many thousand acres of the finest pasture now exist, where nothing but heath formerly grew. It is estimated by one of our most intelligent stock-farmers, that these operations alone increase the productive powers of the land by nearly one-third.

The annual exportation of wool exceeds 415,000lbs. which is sold at the annual Inverness market held in June, which is attended by the Yorkshire manufacturers. Many flocks of 300 to 500 sheep each, are also driven south every year to be sold in the Yorkshire markets, or fed up on the farms in Northumberland, to the amount in all of about 30,000 sheep.

The introduction of the pure merino has been tried by Mr. Sellar. The experiment has been made for several years, and at first with considerable success. The winter does not appear to affect them, indeed it would appear that the quantity of the wool is great in proportion to the severity of the weather. They are however not well calculated for the wetter parts of these hill pastures; and their habits being in some instances unfit for their beneficial occupation, Mr. S. means to get rid of them.

We proceed to consider the state of cultivation on the Coast—It may well be conceived from what has been already said, that the people required improvement in this repect as much as any other. Previous to 1812 the cultivation of Sutherland was so defective that it did not supply itself with hay.—Since that period every exertion has been made to introduce a better and more enlightened system. Every encouragement has been held out to encourage farmers from the more improved districts of Scotland, to occupy some of the coast-side farms. Every incitement was used to induce the native tenant to follow the system pursued by the new-comers. The advantages to be derived from the new course being carefully explained to them and clearly pointed out by actual practice, soon operated as persuasive arguments for pursuing the same plan. Artizans and ploughmen were introduced into the country. The most improved implements, and best kinds of seeds imported, besides every encouragement was given, by granting leases on moderate terms, and for a sufficient time to induce the tenants to exert themselves in the better cultivation of their lands.

The consequence has been, that extensive fields of wheat, (some of them drilled according to the improved Norfolk husbandry,) several hundred acres of turnips sown upon the ridge, and well horse-hoed, and excellent crops of barley (the seed of which came from Norfolk) and clover are now seen, where a very few years back, there was nothing to be found but some patches of the most miserable oats and bear, with which the land was alternately cropped, until it was so worn out, that it would not even produce the seed that was bestowed upon it. Sea-ware which a few years back was neglected as useless, is now sought after with great eagerness, and has been used with equal advantage as a manure for the arable land, and as a top-dressing for pasture. These improvements commenced about the year 1809, since which period no less than 27 sets of farm offices have been constructed; about ½ of these have been erected either wholly or in part at the expense of the proprietor; the remainder were erected by the tenant, and are to be paid for at the end of the lease, by the landlord.

To these various subjects of improvement and expenditure are to be added the repairs of kirks, ministers' glebe houses and school-houses. In those cases where Lord and Lady Stafford are the sole heritors, the entire expense has fallen upon them, which of course is very great.

Among the many difficulties in the way of improvement at first, was the great distance from which it was necessary to bring the most indispensable materials such as lime coals, &c. It was an object of great moment therefore both for present saving, and for the future prosperity of the country, to discover if any of these important articles existed or could be manufactured in the country.

Lime being the most essential of these necessaries, diligent search was made and limestone was discovered. It was found that on some parts of the coast the rocks consisted of this valuable material. Coal also has been found at Brora; a railway has been laid from the pits to the harbour there and £16,000 has been sunk in these works and the buildings connected with them. Four large salt-pans have been erected in which the small coal is consumed; these are connected with the pits and harbour by an extension of the railway. The salt is of very superior quality; there is now a sufficient supply made for the demand of the Moray Frith, and the price is reduced more than one third. Boat-building is carried on extensively also at Brora, where there is a brewery, brick-work, &c. It is a fact of the most gratifying nature to be enabled to state, that the conduct of the people has become gradually more correct and steady in proportion as they have become more industrious. Can there be a more convincing proof of the efficacy of that line of conduct which has produced such admirable effects? It is difficult to conceive that a population so circumstanced as that of the county of Sutherland was, as it were, but the other day, should in so short a time have been able to turn themselves to such various means of industrious occupation.

The progress of this district is so rapid, that it is difficult to keep pace with it even in description. Since these pages were sent to the press, a subscription amounting to £4000 has been entered into to purchase a steam-boat to ply between Wick, Helmsdale, Brora, and Inverness and there to join another vessel which is to communicate through the Caledonian Canal, with the Hebrides, Glasgow, Liverpool, and Ireland.

The progress of the *Fisheries* has even exceeded those improvements which have been detailed. The Herring fishery has for many years been a favourite national object. The employment which it gives to a vast body of hardy fishermen, and the quantity of food it produces, renders few objects more worthy of the attention and encouragement of the public. The herrings on the West coast of Scotland are of a superior quality. The progress made since 1802 has been rapid beyond example. In the year 1814 the Messrs. Simpson proposed attempting it upon the coast of Sutherland, and as this came directly within the immediate scope of the plans laid down for the improvement of the estate of Sutherland, and would give employment to the people who were moved from the hills, it was agreed to afford them every encouragement, & the most liberal assistance. The situation, was on the river Helmsdale, one of the most considerable rivers in the county.—Previous to the above date, *there was not a boat belonging to the place*, except those employed in the Salmon fishery. It was agreed to build for them a complete curing yard, with sheds, which cost about £1200, and for which they pay 6½ per cent. A similar arrangement was made with two gentlemen of Berwick. Their yard including a red-herring house, cost £2100. Since that period 8 extensive curing yards, besides the above, have been built. Warehouses are about to be erected for the storing of wool for exportation. The money expended on these, an inn, and a number of dwelling houses, exceeds £12000. Owing to the rapid growth and improvement of the place, it became necessary to improve the harbour, to render it fit for receiving such trade as might resort to it. In 1818 a pier and breastwork was erected which cost £1600, and which had the effect of deepening the water in the river considerably.

The unprecedented increase of the Herring fishery will be exhibited by the following table.

Years.	Coopers.	Women.	Men.	Boats.	Barrels.
1814	8	60	80	20	2,400
15	17	130	200	50	4,000
16	32	210	400	80	7,300
17	44	330	550	110	9,350*
18	70	520	700	140	14,390
19	70	645	1026	204	20,000

The value of such a trade in such a country, cannot be too highly estimated under any circumstances, but when considered as part of a plan for the melioration of the estate, more particularly with a view to the employment of the removed tenantry, it is a matter of the highest importance. *To have been able to communicate, in so short a time, so much industry and steady exertion, to a population so recently abandoned to the most irregular and inactive habits, is a matter of no light moment.* Already a great proportion of the coopers are natives of the country.—Boat-building has also become a trade which is followed with much success, and many boats are built by Sutherland men, and launched from the side of the mountain, into the sea, by the united exertions of the people. The trade of this port, and the industry occasioned by it, has for the last two years circulated about £20,000 a year in this neighbourhood; about *one half of which sum* went to the men engaged, and out of which they had only to pay for their boats and nets. In what other way could these men have made any sum of money equal to this, and how long would they have been, under the old system, in realising as much profit to the country at large?

(To be continued.)

CURRENT PRICES IN DERRY.

Oatmeal,	...	14	0	*to*	15	0	*per cwt of* 120lb.
Oats,	...	0	10	–	1	0	*per stone.*
Barley,	...	0	0	–	0	0	
New Potatoes,		0	3	–	0	4	
Beef,	...	0	3	–	0	5	*per pound.*
Mutton,	...	0	3	–	0	5	
Veal,	...	0	5	–	0	7	
Butter,	...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax,		34	0	–	45	0	*per cwt. undressed.*
Five hank yarn		2	9	–	3	4	*per spangle.*
Four, do. do.		2	7	–	2	10	
Three, do. do.		2	8	–	2	11	
One, do. do.		2	0	–	2	8	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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* Besides 5000 repacked and exported from this port which were caught off Tarbetness.

Printed for the N. W. of Ireland Society by Moss. Hempton, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

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There is scarcely any occupation in human life which requires more varied information than that of a farmer. In every department of nature there are objects which claim his notice, the study of which will amply repay his attention. The earth, the air, the water, light, and heat, with all their modifications, the unorganized matters extracted from the bowels of the earth, and the various vegetables and animals which occupy its surface,—these *form the great Volume* which ought to be perused by the farmer who wishes thoroughly to understand and successfully to prosecute his business. It so happens, however, that from their way of life, farmers are apter to be led by ancient custom, or by blind imitation, than by any clear knowledge or distinct view of the processes in which they are daily engaged. Hence if we consider the antiquity of agriculture, and the great proportion of mankind who in all ages have followed that employment, it is worthy of remark, how slowly the most obvious improvements have made their way, and how reluctantly men's eyes have been opened on the light which was shining around them.—Some one may ask is it necessary that every farmer should be a philosopher, or that he should carry in his head an Encyclopedia? If that were the case, we might give up the matter in despair, and leave them to blunder on as chance or fancy might direct. That no farmer can make himself a complete adept in that wide range of knowledge which is necessary to the perfection of his art, or in any way connected with it, is readily admitted.—Natural History, chemistry, and the other arts which are the handmaids of Agriculture, it is true, have been carried to a degree of improvement such as our forefathers never could have contemplated, but however surprising the discoveries of modern times, they are justly considered as merely the harbingers of greater and more valuable attainments.—No one who is even slightly conversant with the subject, imagines that the chemist, for instance, has approached to the farthest limits of the field which extends before him, or that the knowledge now possessed in that particular branch is so complete, that posterity, will have no subjects for investigation, no difficulties to be cleared up, no mysteries to be unfolded. Since then those arts which are known to throw light on agricultural pursuits, are themselves constantly progressive, we conclude that agriculture also will advance, as they advance, and that farmers, as well as mariners, soldiers, mechanics, and miners, will be receiving continual accessions of knowledge from the ingenuity of learned men.—But there is a wide difference between a mere operative mechanic, or a common soldier, and the intelligent farmer; the mechanic follows the common routine of the trade, whatever it may be, and his own ingenuity is seldom called forth; and the soldier or sailor has some superior mind to guide his operations, and save him any expense of thought—no so the farmer, no code of rules can be laid down which will bear him out, in every emergency; let him be as wise as [illegible] and conversation can make him, if he cannot *draw from a fund of practical knowledge*, he will be continually embarassed and bewildered, and with all the learning that the age can bring within his reach, he will often find himself miserably disappointed. In place, therefore, of being the mere creature of habit, the farmer, of all other men, requires to possess that noble distinction, of being able to look before and after; he should be sagacious to adapt general rules in such a way as may suit his particular case, prudent in laying down plans of procedure, and skilful in their execution, not devoted to a particular practice, merely *because it has always been the practice*, nor averse to every improvement merely because it is new in his corner of the country. The master of a ship avails himself of the rules of navigation, and the ingenious tables and instruments, which were contrived by far wiser heads than his own, and his practical knowledge would be wholly useless, had not the astronomer taught him how to traverse the pathless deep: just so it may happen, and it has happened, that the farmer has got more instruction on a particular point, from the labours of a philosopher than was possessed or even dreamt of by all the mere farmers in the universe. And why should the farmer disdain to listen to Sir H. Davy because he did not cultivate the earth? as well might the mariner refuse the aid of the astronomer because he cannot hand, reef, and steer, or the miner refuse to employ the safety lamp, because the chemist was not a dweller in his subterranean abode. For the farmer or the sailor, or the mechanic, to turn with contempt from the suggestions of accomplished scholars, is as if the hand should say to the eye, I have no need of thee. Each in his own department is employed for the general good—neither should despise, or encroach on the province of the other.

These observations may to some appear superfluous, since it may be supposed that farmers are unjustly represented as averse to hear instruction from those who are wiser than themselves. There can be no doubt but there are some men of enlarged and enlightened minds among the farmers, but there is good reason to believe that the multitude are of a very different description. A better prospect is likely to open before us. Measures are in progress to place within the reach of that class of men, the kind and degree of instruction which is requisite for them. And if the benevolent project of the N. W. Society be carried into effect, the much wanted union of theory and practice may at length be consummated, and the fruits of the union will be peace and prosperity. An agricultural Seminary will tend to circulate generally some of that useful knowledge, which is now accessible only to the chosen few, it will accustom young persons to a neat masterly style of performing every operation in the fields, to an orderly arrangement of business, to a steady, skilful, and therefore successful application of their powers, to a generous rivalry with their equals, and an ambition to deserve the notice and applause of superiors. Landlords and the superior classes of society will learn something also, they will behold with delight the unfolding of those bodily and mental powers which are the sure support and defence of the country, their patriotism and public spirit will be awakened, and they will become more attached to that country for whom they will have been instrumental in training up a manly, bold, and intelligent yeomanry. EDITOR.

UTILITY OF THE BIRCH
ABOUT SHEEP PASTURES.

Mr. Loch has made the following remarks on this subject:—

"What is singular, is, that the growth of these natural Birch plantations, and the occupation of the grounds by sheep, accord in a remarkable manner. The situations in which these woods naturally flourish, are those districts which are appropriated to the winter keep of the sheep. The consequence is, that the young trees shoot up vigorously during the summer months; and by the time the sheep are turned into these pastures, they have lost their leaves, and the shoots have either got beyond the reach of their bite, or the bark has become so strong and bitter, as to prevent the sheep feeding upon them. The growth of these plantations is peculiarly favourable to the protection of these winterings. Thus increasing their capacity for maintaining stock, by affording the most complete and perfect shelter for the sheep from the inclemency of the storms of wind and snow. In an equal degree are they subservient to the extension and successful prosecution of the herring fishery. The thinnings afford the best materials for smoking red herrings, while the tree itself affords staves for the barrels. Such pieces as are unfit from their crookedness to be thus applied, are used as knees for the construction of boats. The county of Sutherland had been stript of these valuable plantations by neglect or dishonesty, but by proper regulations the trees are rising again in every direction. No arrangement could have been devised, which, to such an extent, would have called forth the whole resources of the country. By one simultaneous arrangement, the people are placed beyond the reach of want, the natural woods supply them with materials for the boats, by means of which they earn their livelihood, the timber equally supplies upon the spot the means of curing the fish, and of carrying them to market, while during its growth it is at once nurtured by the application of the land to stock-farming, and in return, increases the capability of the estate for rearing and maintaining an additional supply of food, and of raw material for the employment of the English manufacturer.

IMPORTANT INVENTION.

We beg leave to call the attention of mechanists, and scientific men in general, to this invention, which bids fairly to supersede the steam engine, with its cumbrous and dangerous boilers. The inventor is Mr. S. Brown, London—and his invention may be simply described as the means of effecting and repeating a vacuum by the combustion of inflammable gas; which being accomplished, it is quite evident, that motion may be produced in machinery by the pressure of the atmosphere, upon principles well known and established. It is called the PNEUMATIC ENGINE. Mr. B. thus explains his mode of applying the gas:—

"Inflammable gas is introduced along a pipe into an open cylinder or vessel, whilst a flame placed on the outside and near a cylinder is, constantly kept burning, and at proper times comes in contact with, and kindles the gas therein; the cylinder is then closed air-tight, and the flame prevented from entering it. The gas continues to flow into the cylinder for a short time, and then is stopped off; during *that time* it acts, by its combustion, upon the air within the cylinder; and, at the same time, a part of the rarefied air escapes through one or more valves, *and thus a vacuum is effected;* the vessel or cylinder being kept cool by water. On the same principle the vacuum may be effected in one, two, or more cylinders.

A vacuum having been thus procured, the motion of any form of machinery follows as a matter of course. We may be allowed to point out an instance or two in which it is manifest that the *pneumatic*, will be far more advantageous than the *steam engine*—while, with respect to *power*, there cannot be any assignable difference between them, because the power of each is derived from the production of a vacuum—in one by means of the condensation of steam, in the other by means of the combustion of gas. The consideration of *power* being thus put wholly out of the question, it only remains to calculate the advantages of the new engine, leaving our readers to strike the balance between the two.—The pneumatic engine is light and *portable* averaging less than one-fifth the weight of a steam engine of the same power. Hence, it is peculiarly advantageous for ships, as it saves tonnage both in its own weight, and in the reduced quantity of fuel. The danger arising from the possibility of bursting a boiler in the steam engine, is entirely obviated in the pneumatic engine; and the very small quantity of gas requisite (being only from a 100th to a 200th part of the cubical contents of the cylinder) should teach us that no fears are to be entertained from any irregular ignition.—The necessary fuel being reduced to a very small quantity owing to there not being any boilers, the expense of working one of those engines will be very considerably less than that for a steam engine, even of less power.

The atmospheric pressure may be increased with perfect safety, to an amount far beyond what can be ventured on in steam engines.—In the steam engines from seven to eight pounds on the square inch, after deducting friction, is the limit of available power; in the pneumatic engines, the pressure is only bounded by the dimensions of the cylinder, which may be increased almost at pleasure.—The mechanical means by which this invention will be applied to produce motion, may be very much varied; and any *rapidity* of motion that may be required, may be obtained without the loss of *power*. The combustion of gas is a more speedy operation than the condensation of vapour; and this fact alone would be sufficient to demonstrate the possibility of obtaining a more rapid motion than steam can afford. If, therefore, a vacuum be made alternately *over* and *under* the piston, it is clear that the motion of the piston will be as rapid as the flash of combustion. In the progress of chemical discovery, if (as is not at all improbable) a cheap mode of extracting hydrogen gas from water should be discovered, the pneumatic engines on board a ship, would be every where supplied without the loss of tonnage; as it is, they may extract the gas from oil, tar, &c. materials which occupy a very small space in proportion to the quantity of gas they evolve. To the physiologist and philosopher we would remark, that this engine affords an instance of approximation towards the perfection of mechanical contrivances, in its adoption of the element *hydrogen*, in place of the compound water; and hence we may observe, that the principle of working this engine is in the strictest conformity with the philosophical maxim of reducing all mechanism to the simplest possible materials.

A new periodical work has appeared, called the Mechanic's Oracle, and Artisan's Complete Laboratory and Workshop, published in weekly numbers at 6d. each. It professes to have for its chief aim the dissemination of useful practical knowledge among our working classes. The following is an extract:—

Domestic Economy.—A knowledge of natural things is only useful in proportion as it can be made subservient to the conveniencies, the comforts, and enjoyments of life.—We shall offer, then, no apology for now presenting our readers with the following useful receipts, as this is the season in which nature produces the fruits that are requisite.

To make English Champagne.—Take green gooseberries fully grown, but not soft or sweet. To every pound of berries, topped and tailed, and then bruised, put a quart of cold spring water. Let it stand three days, stirring it twice a day, and then strain it through a sieve to separate the skins. To every gallon of this liquor put 3 lbs. of sugar, and to every five gallons a quart of brandy. Fill the cask, and bung it close, with a piece of isinglass hung therein. In 6 months, if the sweetness be gone, bottle it off; employ corks of the best quality, and let them be secured with binding wire. The berries may be bruised with a wooden mallet, or with a common smoothing-iron, but not so as to break the seeds.

Dr. MacCulloch disapproves of the use of brandy in manufacturing wines of this kind; and recommends adding to the must about 6 ounces of common crude tartar. Probably this may be an improvement; but having seen wine made according to the above receipt, which could not be distinguished from French Champagne, we have therefore given it without alteration.

Preservation of Fruits and Juices.—The common method of preserving fruits is by means of sugar, but they retain their natural flavour much better when this is done without the use of such an agent. As the process, though very simple, may be unknown to many of our readers, we state the method in a few words. It consists in enclosing the fruit to be preserved, in common quart bottles, or jars, corking them with great care, as the success depends principally on the complete exclusion of the air; and in submitting the bottles to the heat of boiling water, for a longer or shorter time, according to the nature of the article.

Fruit intended to be preserved, either whole or in quarters, ought not to be completely ripe, being then apt to dissolve in the water-bath. Nor should it be gathered either too soon or too late. The first and the last of the crop have neither the fine flavour, nor the perfume of those which are gathered in the height of the season; that is when the greatest part of the crop of each species is ripe at the same period.

The water-bath best adapted for this purpose is a boiler furnished with a cock close to the bottom, to let off the water. When it can be made convenient, the bottles should each be put in a bag open at both ends, with runners to draw them together at the shoulder, and over the edge of the bottom; or they may be put in common stockings. This prevents the necessity of hay or straw, to keep the bottles from touching. Another method is to tie a string round the neck of each bottle, and hang them upon sticks. The bottles when corked, should also have a good luting smeared over the cork and neck, and this should be done before they are put into the water. The bottles being placed in the boiler, cold water is to be poured into it up to their necks, and then the fire is to be lighted. *An excellent luting* fit for the purpose is made of fresh quick lime, slacked in the air by adding water till it be reduced to a powder, which should be kept in corked bottles. This powder mixed with skim-milk cheese, or with curd of skim-milk, from which the whey has been separated, and worked to the thickness of paste, produces a luting which hardens rapidly, and stands the heat of boiling water.

CURRENT PRICES IN DERRY.

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Barley, ...	0	0	–	0	0	
New Potatoes,	0	3	–	0	4	
Beef, ...	0	3	–	0	5	*per pound.*
Mutton, ...	0	3	–	0	5	
Veal, ...	0	5	–	0	7	
Butter, ...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax,	34	0	–	45	0	*per cwt. undressed.*
Five hank yarn	2	9	–	3	4	*per spangle.*
Four, do. do.	2	7	–	2	10	
Three, do. do.	2	8	–	2	11	
One, do. do.	2	0	–	2	8	

Some years ago a list of Queries (which we shall insert in this paper) was published in the Scotch Farmers' Magazine. It will serve to illustrate the position with which we set out, that the field of knowledge which invites the attention of the farmer is very extensive. It will also tend to shew on what topics the pupils of an agricultural school might be employed.

QUERIES ON VEGETATION.

(From the Scotch Farmers' Magazine.)

1. *Concerning the Earth.*

1. What effect has the earth in promoting the growth of plants, and bringing them to perfection?

Supporting them in a proper position; receiving, retaining, or communicating, moisture and other matter, for their nourishment; receiving and reflecting the rays of the sun, dews, and exhalations; thereby forwarding their growth and perfection.

2. Is it of any further service than to keep the plants steady and upright, and to contain at least some part of the nourishment on which they live?

Answered above.

3. Are there not different kinds of soil, which suit different plants?

Most certainly. I do not know any plant that will not grow in different soils by constraint; but none will thrive in a superlative degree, except in that which is peculiarly adapted to its nature.

4. Is there any kind of soil, in which some useful plant might not be produced?

By proper cultivation of the given soil, I think not. Even irony till, which is thought to be the most inimical of any to vegetation, can, by proper management, be made productive of useful plants.

5. Are there any plants which will grow perpetually in the same soil; and what are they?

Yes; generally those that are termed succulent, as the cactus and euphorbia, in an exotic state; and certainly every plant in an indigenous state, as the heath, the juniper, the fox-glove, &c.

6. What is the reason of soils tiring of one species of plant, and yet producing another species vigorously?

Because certain plants exhaust the soil faster and more than others, and that one plant will thrive, where another only existed.

7. Of what is a soil deprived, when it is said to be exhausted?

Nutritive matter, moisture, &c.

8. What are the component parts of the most fertile soil?

Calcareous earth, as lime, chalk or marl; clay and sand, in this proportion, or nearly—Clay, four-eighths; sand, three-eighths; calcareous matter, one-eighth; judiciously manured with dung, or dead vegetable matter.

9. Must not soils, in order to be perfect, have the power of retaining a sufficient quantity of moisture?

Certainly.

10. What are the best means of giving them that property?

Adding a sufficient quantity of adhesive matter, if too porous.

11. Are not soils, of too porous a quality, such as those which consist almost solely of sand or gravel, in a great measure barren, not only because they hold no water, but also because any manure put on them is soon carried down and lost, before it has had time to operate?

Most generally; but there may be some pernicious metallic substance also in the soil, and which may co-operate in causing sterility.

12. At what time does the earth seem to be in the best state for receiving the seed of plants?

When new digged or ploughed, if in a moderately dry state.

13. If earth is buried for some time after it has been exhausted, will it recover, in four or five years, its former fertility?

In a very great measure, if not buried too deep.

14. If earth does recover its fertility, may that not be owing to the richness of the manure on the surface being washed down to it?

Not altogether, but partly.

15. What is the effect of exposing such exhausted earth to the sun, or shading it merely from its rays?

Exposing it to the sun's rays in part, by throwing it into a large lengthened heap, whereby it is also partly shaded, and turning it over once in two or three months, will sooner restore it to fertility than any other process, exclusively of adding fresh matter. The oftener the surface is encrusted with frost, and the freer it is kept of weeds, will be the more aiding to this desirable purpose.

16. Is it of service to change the seeds of plants from one soil or climate to another; and why?*

Yes; because, otherwise, the seeds of many annual and biennial plants are found to degenerate.

17. What soil is the best adapted for nursery ground; and to what is the superiority of such soils owing?

Soil of a free open texture, and moderately rich;—because all seeds vegetate, and all plants strike root best in a lightish soil, altho' by nature, they may require a different kind afterwards, to bring them to maturity.

II. *Concerning the Air.*

1. What effect has the air, in promoting the growth of plants, and bringing them to perfection?

An effect similar to that it has on animals, inflation and respiration. Also, of conveying, or rather containing, part of their food, which it deposites in the soil, to be imbibed by the roots; and part it conveys into their system, by means of the pores in the bark, leaves, &c.

2. Is pure air necessary for that purpose?

I believe many plants would live, and even thrive in air, that might be fatal to most animals; but I am convinced that pure, or at least what we term wholesome air, is essential to the production of wholesome fruits, pulse, and grain.

3. Do plants draw the whole, or any part of their nourishment, from air?

Not the whole, part only; that is, plants in general. For, in contradiction to any hypothesis that I know of, I have to state, that I witnessed an aloe live for upwards of seven years in a state of suspension between heaven and earth, without a particle of soil about its roots, and without any visible signs of decay or mutability. Its situation was such, however, that is was equally a stranger to rain, frost, and the rays of the sun.

4. Does the earth, when fallowed attract any substance from the air favourable to vegetation?

I think it does. The nitrous acid of the air, being imbibed by the fallow soil, is of infinite advantage in reducing dungs, either then or afterwards deposited in it, into that state of mucilage allowed to be the pabulum, or essential food of plants.

5. Do roots, as turnips, potatoes, &c. extract nourishment from the air by their stems or leaves, and hence exhaust the soil less than grain? or do they fertilize land by the substances they throw off, and leave behind them?

Partly both ways; but probably the soil is also benefited by the action of the air, as above stated, on account that, in the culture of these crops, it is frequently stirred, and exposed to the elements.

6. Do trees draw any nourishment from the air by their leaves?

I should think they do.—See answer to Query 1. of this head.

7. Do not young trees thrive better, when their roots are near the surface, and not too deeply buried in the earth? Would they thrive in heaps of stones, which, it is said, has been successfully tried in France?

To the first clause, I have to answer, Certainly; but I think the second clause by no means explicit. If it has been *found to answer* in France, why put the question in Britian? or, why was it not stated whether the trees were absolutely planted in heaps of stones, without any kind of soil, or if heaps of stones were merely laid round their stems on the surface of the earth? But I am inclined to think this too much of a *hearsay* story. *It is said to have been successfully tried in Franee.* Many wonderful things savour of France!

8. When plants are raised under glasses, how often ought fresh air to be admitted?

In fresh weather, every day, less or more; in sunshine, from about nine in the morning to five in the evening, less or more, according to the season of the year. Even in the time of severe frost, if bright sunshine, a little air must be admitted, and in smaller or greater quantity, according to the hardiness or tenderness of the plants in question. Air ought likewise to be admitted and taken off by degrees, *i. e.* the full quantity for the day should not be given in the morning; perhaps only one half or a third, increasing as the sun advances in the horizon; taking it off, in like-manner, as the sun retreats in the afternoon; always observing to shut up several hours before sunset.

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* In Flanders, they are said to prefer flaxseed from Sweden or Russia; and in Sweden and Russia, flaxseed from Flanders.

9. If no fresh air were admitted, would the plants grow languid, or perish?

Languid, and ultimately perish.

10. Do plants thrive as well kept in glasses, as in the open air, the temperament being equal?

By no means.

11. Does there seem to be any sympathy or antipathy between plants; or any natural disposition in some plants to thrive when growing near to certain others; and the reverse?*

There at least would *seem* to be an antipathy between the artichoke and other plants, as weeds, if sown ever so thick, will not grow *under* them, although they will thrive very well *beside* them; but perhaps this is owing more to the shade, than any inimical quality in the leaves of this plant. It has been *said* that wheat will not thrive within I don't know how many hundred yards of barberry; and nothing more ridiculous could possibly have been *said;* for I can aver, for one, that I have repeatedly seen as fine wheat as ever grew, in a field enclosed on all sides with a barberry hedge, in a wild, unclipt, shrubby state, and which produced flowers and fruit in abundance. I am as little inclined to think there is sympathy between plants, except such as a favourite soil and situation *seemingly* begets between such plants as happen to affect one and the same. But, it might be asked, Have plants a will, a desire, or inclination, to be placed by their friends or lovers; or to be removed to a distance from their enemies?

12. Are there plants that grow well under the shade of others; and what are they?

Many plants grow well under the shade of others; but none grow so well as if unshaded, and in their nativity.

13. What are the effects of thunder, or of lightning, or any change of air thereby occasioned, upon plants?

Baneful; frequently dissolution, if struck with the material fire, or lightning. But, on the other hand, the growth of many plants is much promoted by the sultry moist heat, frequently attendant on or following a thunder storm. The electrical fluid is also known to be aiding to the growth of plants, by real experiment; that is, by the circumambient air, or what may be called the immediate atmosphere of the plant, being charged in a moderate degree by the wheel, for several days together, vegetation has been observed to increase in a very considerable degree.

14. What are the effects of sea air, and the saline particles which it contains, upon plants?

If they are situated at a considerable distance from the sea, and the sea air is mixed with fresh air before it comes into contact with the lungs of the plants, or the soil wherein they grow, it is attended with little bad, perhaps good, effect; but if they are situated on the brink of the ocean, the effects are such, that they are stunted, hidebound, and all their juices contaminated by its baneful influence and astringency, more especially while the wind blows from thence.

III. *Concerning Water.*

1. What effect has water in promoting the growth of plants, and bringing them to perfection?

Nourishing the root, increasing the quantity of sap, and refreshing the foliage. Water is also probably the chief vehicle by which the essence of dungs, and other manures, is conveyed into their system.

2. What kinds of water are favourable, and what are injurious, to vegetation?

Soft, that is, river, rain, or waters that have been exposed to the rays of the sun a considerable time before application, are favourable; and hard, or waters that are impregnated with metallic substances, are injurious to vegetation.

3. What has been the effect of watering young or old plants with hard water?

Very bad for either, if persisted in; and more perceptibly so, at first, on young than old plants.

4. What is reckoned the fittest time for watering them, and why?

Mornings and evenings, before and after the sun's heat is violent; because, otherwise, it would be rendered of less beneficial effect, owning to sudden exhalation.

5. Does the sap in trees flow all the year round, or during what seasons?

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* It is said, that hops and potatoes do not agree together.

As long as a tree or plant (*i. e.* the stem, branches, or haulm) can be said to be in life, its sap undoubtedly flows in a greater or less degree. For instance, cut any part of a vine, birch, sycamore, oak, &c. in the dead of winter, the juices will instantly flow at the wound, although not so copiously as in the early part of spring and summer. The circulation is also either promoted or retarded much by the influence of the climate.

6. Does any water perspire through the bark of the tree, or from the leaves?

Considerable quantities both ways.

9. What is the effect of dew upon plants; and to what extent is it favourable to vegetation?

The effect of dew is nearly similar to that of rain, only in less proportion; it nourishes the roots, and refreshes the foliage in a very considerable degree, if not suddenly evaporated by the heart of the sun. Cannot say to what extent it is favourable, much depending both on the nature of the plant and the season.

(To be continued.)

To the Gentlemen, Farmers, and others, cultivating Flax in Ulster and Leinster.

The present state of your flax market is very gloomy; a great quantity of old flax on hands, and the large new supply getting ready for market, many of the little farmers depending on the sale to pay a gale's rent with. On looking over English imports, the import of flax into Great Britain amounts annually in value to two millions British. This market is naturally your's; you receive woollens from no other country, and every thing of value made in Britain is protected. Lose no time in calling for a heavy duty on foreign flax; and this will have an immediate influence on your markets. By the public papers, it is announced, that the small town of Arbroath, in Scotland, lately imported from Russia 1500 tons of flax. This single town's order here would circulate £50,000 through your country, and stimulate the trade. There are many of you personally acquainted with the Trustees; and through Mr. Marshall, and your County Inspector, Mr Fowler, you should individually and collectively address them. It is strongly for their interest and honor to support you; they can have little feeling for the [illegible] peasant—they are a gross race. But wheat at Odessa, in Russia, is only 22s. per quarter, that is about 2s. 9d. per bushel; pork, probably 1d. per lb; land, rich and strong, for a mere trifle; taxes, very light, and labour very low. Against such advantages, you can only contend by exclusion; and as you are equal to supply Britain, you have a right to ask for her market. The great Devonshire, Fitzwilliam, and Darnley ought to be interested in the matter, as they draw immense sums from this country: it is said 40 members attend their nod in a very influential house. If applied to, they would surely give you a preference over the Russian, who is both commercially and politically their antagonist.

It is not necessary to point at your own nobility: they certainly would support you. You, to oblige Britain, drink the coarse and heavy inflaming wine of Portugal; while the wholesome wine of France is taxed to nearly exclusion, merely because Portugal is a good customer for British goods. You are a much better connexion than Portugal, and demand the same treatment.—But in asking for the English market, take care to deserve it. The directions for managing flax, after the Dutch manner, have been published in all the Newspapers, and are, I believe, in the Belfast Almanack. You that have not seen it, make your green buts small, and cover it in the steep hole of still water, with soft or wet earth, to exclude the external air, and in lifting, be careful to have the ends even, and if the flax is fine, let the but or sheaf be not more than 4 or 5 pounds, and this will go into the metal cylinder, for bruising, in a good flax mill without disturbing the flax; which, if cropped, injures the flax much. If you sleep on this, you'll be sorry, when too late. Adieu. I wish you well.

AN UPPER IVEAGH FARMER.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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THE DAIRY.

Cork butter has maintained a higher character than any in Ireland, till of late. Carlow butter, for some time back, had brought higher prices than any other, but in the present season, that of Belfast is quoted nine or ten shillings higher than either. This, to us in this quarter, is a very encouraging circumstance. It has been a very general opinion that such is the superior sweetness of the pastures in the south, their butter must always command a preference to that of the north. It is plainly evinced now, that the natural advantages of the southerns need not drive the northerns from the market, provided the latter employ the necessary measures to insure success.

The country surrounding Belfast abounds with substantial farmers, whose wives and daughters are sufficiently attentive to cleanliness, properly qualified by their skill, and suitably provided with accommodations to bring forward an article of the best quality—such an article as carries the palm in the English Market. Another circumstance to which we may ascribe the high character of Belfast butter, may be the very great strictness with which it is tried and examined at the weigh-house. And what is to prevent the people of the N. W. from vying with those of the N. E.?—*A word is enough to the wise.*

Suppose that a premium of ten shillings per cwt. were offered for the best quality of butter produced at the weigh-house of Derry on a given day, there can be no doubt, that the advantage would be very great. Not only the successful candidate would be benefited, but many others would improve so much as to raise the character of our market, and to obtain an advance in the price. But why should a country-woman be regardless of her interest, though such a premium were never offered? What in the world is to prevent her from producing butter as good as any exported from Belfast?—and if in place of 77s. per cwt. she can obtain 87s. per cwt. might she not be as proud of the premium thus earned, as if she had obtained an equal sum from the N. W. Society?

The Editor has the pleasure of knowing that some of the best housewives in the country consider the directions given in this work as highly useful, if not by actually giving them new information, at least by reminding them of some particulars which they had omitted, or not sufficiently attended to. A few extracts from a new work called Domestic Economy, are this day submitted to our readers, in the hope that some may derive advantage from them.

This writer recommends that one window of the dairy should open to the north, and another to the south; thus the temperature may be, in some measure, regulated in the different seasons; but it will be proper that the windows when open should admit nothing but air and light. Glass may certainly be used, but gauze, or oiled paper within the lattice, will be found the best.

If the expense can be afforded, the apartment should be vaulted—at all events it may be ceiled. The walls ought to be well whitewashed, the floor well flagged or paved with proper tiles, and every thing so arranged as not to interfere with the utmost tidiness of preparation. If its size will permit, place shelves of table height all around it, if not sufficiently large then, a higher shelf may be added. Where the floor can be laid with a gradual descent, either to the middle, where a small grating may lead to a drain, or else to one of the sides, it will be found a most convenient arrangement. No extra damp should be permitted to lie until it evaporates; and it ought to be an invariable rule that the cheese presses shall be placed in another apartment.

If the inequality of the ground permits the dairy to be so placed that a pipe may be laid from a natural spring, with a small reservoir and stop-cock, great advantages from freshness and cleanness must ensue, especially if the water can be made to fall from a height into the reservoir—otherwise there ought to be a good sized reservoir, with ready means of supplying it, so that the idea of trouble shall not tempt the dairymaid to avoid the necessary expenditure of water.

In regard to vessels, those of wood are unquestionably the sweetest, though they require more care with respect to scalding and rubbing, than other materials. Those of lead may, from accidental causes, be prejudicial to the health, and they likewise require great attention. They should be scoured with salt. Vessels of pottery are often badly glazed, and that too with materials prejudicial to health. Before any of these are applied to use, it will be proper to test them by means of a short and simple process. Fill the vessel with vinegar, into which put some fat of beef salted. Set this upon a stew-pan to boil for half an hour; then set all by for twenty-four hours, and if the glazing is badly executed, small particles of the lead will be discovered of a black colour, proving the vessel to be unfit for use. Lately cast-iron vessels have been manufactured for the dairy, and we understand that for neatness and cleanliness, they cannot be surpassed by any other substance.

To be well managed, indeed, a dairy at first sight seems expensive; but a moderate number of cows will always pay for the extra attendance of keeping them as clean and comfortable as horses. Perhaps no mode of managing cows is preferable to that of Mr. Harley of Glasgow, whose cow-house is an object of curiosity to all who visit that thriving and interesting city. When we saw his *cow establishment*, it contained ninety-six inhabitants; each cow was confined to a post by a chain across her neck, of sufficient length to allow her, by means of a sliding ring, to lie down when she pleased. The cows stood in pairs, one fronting another, on each side of the cow-house, leaving a space wide enough for the attendants to pass between their heads. Each pair has a grating between them, and the hay is cut by means of a small steam engine. The temperature is regulated with great nicety, the whole premises kept in the most delicate state of cleanliness, and the cows are regularly curried and rubbed down, which supplies to them the place of exercise; as they never go out exceptat a given period after the birth of their first calf—not being retained long enough by Mr. H. to have a second. It will therefore be easily imagined that the quality of the milk must be as desirable to the purchaser, as the quantity of it must be profitable to the proprietor. Besides the milk which is principally sold in Glasgow, there is a supply sufficient for keeping a large stock of pigs, and out of these twenty roasters are selected every Wednesday, and sold at half a guinea each.

Our author records some late and very curious experiments on the properties of milk, and their application to domestic purposes, which have been tried in Switzerland. Dr. Schubler, we are informed, a Professor of Agricultural Chemistry in the celebrated establishment of M. Fellenberg, at Hofwyl, had been led by his investigations into the nature of milk, to results conceived to be interesting to the farmer of every country.

"Morning's milk," he says, "commonly yields some hundredths more cream than the evening's at the same temperature. That milked at noon furnishes the least—it would, therefore, be of advantage in making butter and cheese, to employ the morning's milk, and to keep the evening's for domestic use.*"

The economic dairyist, says our author, will find advantage in noting, that of all green foods, sainfoin is indubitably the best to increase milk and cream; but when there is not a supply of green food, it will be judicious to give them their fodder either boiled or steeped in warm water, allowing it to stand until it is cold—a process which is said to produce a saving equal to three-fourths of the food. The cattle should be allowed to use the liquid as well as the hay. It has been often observed, in countries where there are springs of different temperatures, that when the cows are in the habit of drinking at the hot springs, which they will do of choice, they always give more milk than when drinking cold water.

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* The other experiments are omitted, not appearing of much importance.

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North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

QUERIES ON VEGETATION.

(Continued from page 320.)

IV. *Concerning Light and Heat.*

1. What are the effects of light and heat, in promoting the growth of plants, and bringing them to perfection?

Giving the natural colour to foliage, flowers, and fruits; making the sap flow and circulate; increasing the farinaceous matter in grain; and increasing the saccharine matter in, and enhancing the flavour of, fruits in general.

2. Are any plants raised totally in dark places? Do they produce flowers or fruit in that situation?

Yes; but excepting the fungi tribe, I do not know of any whose flowers and fruit have been produced in perfection.

3. Is not light essentially necessary to give plants their proper colour and flavour?

Most certainly.

4. Does not heat and light increase saccharine matter in grain, and in that respect bring plants to greater perfection?

Surely, inasmuch as grain, raised in warm or improved climates, is more rich and productive of spirit, than that raised in cold or unimproved situations.

5. In raising plants from cuttings, is it not necessary to keep them in the dark, until they take root?

It is necessary to keep many kinds of cuttings almost in the dark, until they have taken root; and all kinds are the better for being shaded from the strong rays of the sun till then.

6. Do not seeds, that lie long upon the ground uncovered, perish from the light and heat?

Not always; they are equally liable to perish because of wet, drought, or frost, according to their natures.

7. Do not plants succeed better when transplanted in the evening, and in cloudy weather?

Certainly.

8. How does the heat of stoves answer, compared with the heat of the sun?

In a very considerable degree of degradation.

9. What is the effect of heat from steam, compared to that of fire?

Generally more mild, but also sometimes more pernicious. If the steam is confined in a flue the same as smoke, the effect is the same, If it is suffered to diffuse, it is salutary in a dry, and pernicious in a moist, climate.

10. What are the effects of hot walls, in promoting vegetation? and is the effect ascertained, of making fruit walls black, so as to imbibe more heat during sunshine?

If properly managed, hot walls have much less effect in promoting the growth, than in perfecting the annual shoots, of plants placed against them; as, by the time artificial heat is applied (which should not be before the middle of July), their vegetative powers for the season will be nearly exhausted. Fire-heat is with propriety applied to flued walls which have no glass covering in the autumn, in order to aid nature, in a cold climate, in ripening the shoots and buds destined to produce the succeeding crop of fruit. But the attempt to force fruits on these walls in the spring, has not been generally attended with success.

By painting part of a brick-wall black, against which one wing of a peach tree was nailed, and letting that part, against which the other wing was nailed, remain in its natural state or colour it has been ascertained, that black does very considerably absorb heat, as the fruit on the painted part were ripe ten days sooner than on the other.

11. What is the result of a practice in Denmark, by which, to keep back the blossoms of their fruit trees, they cover them, in the spring, in the day-time, and expose them at night?

I think the Danes extremely right in this practice; and I am convinced it would be very beneficial in this, and all cold climates. The cause of the failure of our fruit-crops is more generally owing to bad weather coming on the back of good, in the spring-time, than any thing else; and if we could keep back vegetation by the above process, or any other to a better and more settled season, it would be an important improvement.

12. Has the experiment been tried, of plants being shut up in a dark place, with only one hole in it, into which the light was admitted, to see whether the plants would bend to the light?

Yes; and every plant will bend to the light, whatever angle of the horison it is admitted from. If the rays of the sun are admitted, it will be the more obedient.

13. Are trees better nourished on their southern than on their northern side, and are the inner circles thickest to the southern than to the northern aspect?

Yes; with respect to trees placed against a wall. With respect to trees standing freely exposed, I do not think they are.

14. Do plants grow most in the day or in the night time?

I cannot positively say of all plants; though, judging by analogy, I believe most do grow more in the night than in the day, in summer particularly. I have found, that vines in a hot house grow most in the night, from about the 1st of April to September.

15. Will vines produce leaves and fruit, in a hot-house, in frosty weather, if their roots are not protected from the frost?

Yes; but by no means so luxuriantly as if protected; nor will the plants continue to flourish as well for a series of years. Indeed, neither could reasonably be expected, considering that, in this case, one part of the plant would be placed, as it were, in Greenland, and the other in the Indies.

V. *Concering Manures, or Dead organized Matter.*

1. What effect have manures in promoting the growth of plants, and bringing them to perfection?

By correcting tenacity and porosity in the soil, exciting its fermentation, communicating nutritive matter, and affording nourishment to the roots of plants, manures greatly promote vegetation and their perfection.

2. What are the effects of the different kinds of manures, of which you have had experience?

First. Vegetable earth of decayed tree-leaves, and of decayed vegetables, of different kinds, mixed together, I have ever found mild, nutritive, and of the most salutary effect; nor have I ever found that I had applied too much. *Secondly,* Stable-dung, on all heavy loams and cold soils, not too much fermented, I have found of good, and on light dry soils, unless pretty much fermented, of bad effect. *Thirdly,* Cow and hog-dung, on light dry soils, I have found to be salutary, and the contrary on cold and wet ones. *Fourthly,* Sheep and deers' dung, applied to in moderate quantity, has a good effect on all loams, especially those that are tenacious and wet. *Fifthly.* Pigeon-dung, at least a year old, mixed in equal quantity with vegetable mould, I have found of the most happy effect, when discreetly applied to heavy land, and being buried only two or three inches. *Sixthly,* I have found whin and fern ashes, mixed with a little good earth, an excellent top-dressing to grass-land of a stiff wet nature.—*Seventhly,* A compost of coal-ashes, soot, pigeon-dung, and sea-gravel, wherein was a considerable quantity of shells, I have found of infinite advantage to a very tenacious tilly clay. *Eighthly,* I have always found sea-weeds (or ware) a good manure, either as a simple, or being compounded with dung and earth. *Ninthly,* I have seen a very cold, wet, back-lying, clayey field, much fertilized by one dressing with the rubbish of some brick-kilns, which was freely applied, and of which coal-ashes made a considerable part.

3. What is the proper time of applying those manures?

Much must depend on circumstances; sometimes in fallowing, but more generally at the time of sowing or planting; and always when the ground is in a moderately moist state.

4. What is the proper mode of application; mixing them with the soil, laying them in drills, or top dressing?

All these modes are proper, according to existing circumstances, and the nature of the crop to be manured.

5. Do those manures promote the growth of plants, by making the soil more porous and open for their roots, by exciting a fermentation in the soil, by affording nourishment to the plant itself; or in what manner do they operate?

By all these means, in conjunction with those of retaining moisture in dry, and expelling it in wet soils; also, by correcting crudity in, and adding fertility to sterile ones.

6. In order that manures may be useful, is it not necessary that the soil on which they are laid, should have a considerable degree of tenacity?——Certainly.

7. Is it better to mix a great quantity of manures together, into a compost, or to lay them on separately?

Compost manure is most generally to be preferred, particularly if any calcareous matter is to be applied, as lime, marl, &c.

8. What is your opinion of composts of manure and earth?

A very proper mode of application.

9. Do you know of any practices by which the quantity of manure could be increased?

By throwing the leaves and haulm of all vegetables into a common heap, and letting them remain till well rotted, then mixing them with lime, ashes, soot, dung, &c. or in the process of collecting them, and watering the whole frequently with the drainings of a dunghill: by mixing the scourings of ditches, pond-mud, scrapings of roads and pavements, &c. as above: and, by cleaning out the furrows of all pasture-lands every second or third year, mixing it with lime, &c. and applying it as a top-dressing.

10. What manures are found to answer best for the different kinds of soil?

Those of a cool moist nature, as vegetable earth, pond-mud, cow-dung, &c. answer best for dry and absorbent soils; and those of a hot, and more generous nature, as stable-dung, pigeon-dung, soot, ashes, &c. for cold wet soils.

11. What are the effects of dung and other manures, upon the taste, flavour, and wholesomeness of vegetables?

If they have not undergone a proper fermentation, their effects are, giving a rank and disagreeable flavour to fruits and herbage; and, if an immoderate quantity is applied, of producing a considerable degree of unwholesomeness, and tainting the juices of many plants.

VI. *Concerning Culture.*

1. What effects has the culture of the earth on the growth of plants, and bringing them to perfection?

Of producing health and vigour, in a very conspicuous degree, both on root and branch.

2. Is not earth, the more it is cultivated and pulverized, proportionally the more favourable to the growth of plants?

Of course, yes.

3. Do not young trees, when transplanted, grow better if the soil has been ploughed, or trenched, and thoroughly pulverised?

Certainly.

4. Is it not better for young trees, that potatoes, turnips, or other vegetables, should be raised amongst them; and how long should that be practised?

It is more beneficial for the trees, that an under crop be cultivated amongst them, than that the ground lie, in grass, weeds, &c. but, were the ground properly cultivated, without an under-crop, it would be still more so. Potatoes, cabbages, &c. may, with propriety, be cultivated in young tree-plantations, for four or five years, or till the roots of the trees begin to come into contact with one another, but not longer; because, if persisted in after that time, the extreme fibrils, which are the purveyors of the plant, might be materially injured.

5. Is the advantage of that practice owing to the freer admission of air or water, to the roots of young trees; or what other benefit can be assigned?

First, Of course, yes. *Secondly,* The soil is also much benefited by this species of fallow.

6. Is the earth as thoroughly pulverized by ploughing and harrowing, as when dug with the spade?

By any process of ploughing and harrowing that I have yet witnessed, no.

7. What is the difference of expense per acre, in the two modes of cultivation?

Much must depend on the quality and the situation of the land, and the state of labour; the difference of expense may be from 20 to 30 shillings per acre.

8. Would the difference of produce make up for the difference of expense?

I believe it would, in many cases; and I am convinced that, in all cases where the depth of good soil is greater, or beyond the reach of the plough, trenching with the spade, once, in four or five years, would answer the expectations of the most sanguine.

VII. *Concerning Substances in the Earth, injurious to Vegetation.*

1. What are the substances most inimical to vegetation, in different soils; and how do they operate?

Metallic, sulphureous, aluminous, and all astringent substances are inimical to vegetation; and soils wherein these are found, are more or less fertile, according to the quantity of metal, &c. they contain. Their effects on the tender roots of plants, in corroding and cankering them, are such as frequently occasion decay, sickliness, and dissolution.

2. What is the best mode of counteract-

ing the injury to vegetation done by those substances?

Pulverization, exposition to the elements, and the addition of dissolvent matter, as lime, chalk, &c.

3. Is there not an astringency in peat moss, hostile to vegetation? How is that to be corrected?

First, Yes. *Secondly*, By judicious draining, and afterwards treating it, as above, as the case may require. In many cases, also, it is necessary, and in all cases proper, to add adhesive and more ponderous matter in the cultivation of peat-moss.

4. What is the reason for putting American and other foreign plants, into peat? and are there any other kinds of plant, as celery, &c. that thrive particularly well in that soil?

A mixture of peat-earth, purged of its noxious qualities, with loam, &c. is found generally to suit their nature, as more immediately resembling the soil, of their nativity.—There are many European, and even British plants, which also thrive best in this kind of soil; and there are many American and other foreign plants that do not.

5. Do trees, when their roots reach a stratum full of aluminous or metallic particles, decay; or are they arrested in progress; and what measures ought to be taken when that happens?

When trees are observed to decay, from their roots having reached a cankering metallic stratum, I think it is then time to stub them up, as I have not been yet able to discover a cure; and I had rather see no tree, than see a sickly one.

VIII. *Concerning Vermin, noxious to vegetation.*

1. What are the kinds of vermin in the soil, most hostile to vegetation?

The grub, slug, maggot, and mole.

2. Is there any mode of destroying them?

The grub, slug, and maggot, may be destroyed by the application of lime, soot, snuff and sulphur mixed, tobacco water, and by rolling the ground late in the evening, or early in the morning. The mole, by any of the common methods of trapping or by terriers.

3. What is the cause of the blight in wheat, and other grains, and the best means of guarding against it?

Ethereal fire! and the means are supernatural. But observe, I distinguish between blight and smut: and, on some other occasion, may offer my ideas more at length on this subject.

4. Are bees favourable, or otherwise, to the growth of those plants, from the flowers of which they extract their honey?

I cannot suppose that bees are unfavourable to the growth of any plant; and I know that they are very useful in dispersing the farina, in all hermaphrodite flowers, and transporting it from male to female, on androgynous plants placed in hot-houses, melon frames, &c. and on which the wind cannot act, in facilitating that object, with the same effect as in the open air.

5. What seasons are supposed to be most favourable for the production of the different kinds of insects? and are there any precautions that can be taken against them?

Dry, hot seasons, are generally most productive of the acarus, cocus, maggot, ant, &c. and wet ones of the grub, slug, snails, &c. It might be difficult to say what precautions are to be taken against them; but every one who has his own interest at heart ought to be indefatigable in repelling their attacks.

6. Are there any plants, or shrubs, the smell of which is destructive to insects?

I don't know that the smell of any plant, in its natural growing state, is destructive of insects; but there are several plants which are, when dried and reduced to powder, or when burnt near to certain insects; and these are, tobacco, hemlock, assafœtida, rue, wormwood, hen-bane, &c.

7. Have the foreign plants, brought into this country, introduced any insects peculiar to themselves; and have they afterwards become injurious to any of our native plants?

The pine apple brought that species of insect called the pine-bug, which, however, I have never seen on any other plant, although placed in its immediate vicinity. I believe, another species of that insect, called the brown-scale, or orange-bug, was brought with the orange-tree; but it is now found on many other stove and green-house plants. I have never seen any of them on native plants.

8. Has fumigation with tobacco, and other substances, been found a complete remedy for vermin?

in very many instances; for several kinds of insects, I have found fumigation effectual, particularly for all kinds of the aphis.

9. Will water, mixed with coal-tar, destroy insects either in the ground or on plants?*

It will destroy some tender kinds, as the aphis, thrips, &c. but the process is easier by a fumigation of tobacco, and also more certain. On the whole, it seems rather to retard the progress of, than destroy, insects; and it produces unsalutary effects on vegetation by its astringency, if too freely applied. I have never, however, tried it for insects in the soil.

10. In what respects are moles injurious to vegetation; and what are the best means of destroying them?

In so far as they disturb the roots of established, and displace those of infant plants.—They may be destroyed by trapping, &c. See answer to query 1 of this head.

(Continued from page 267.)

The other kind of oats ripens at least a fortnight earlier than the former, if sown at the same time in the proper season. It is a plumper and more compact looking grain, and rather more weighty, though the difference in this respect is less than the appearance would indicate. It requires a very rich soil to rear it to the utmost perfection; and the stalk is so strong, and at the same time so short, that it is in no danger of lodging even upon the richest soil, let the season be what it may; on this account, and because it does not tiller much, double the quantity of seed of this sort may be safely sown, than durst be ventured of the other. The ear is short when compared with all other kinds of oat that I have seen, and the foot stalks are stiff, and stand out from the stalks nearly at right angles. From the circumstances here stated, it generally happens that upon *very rich* land nearly double the quantity of grain could be reaped, if it were sown with Poland oats, for so they are usually called, (the name, however, should not be relied on, as other sorts are known by the name,) than could have been obtained from the same land, had it been sown with Blainzlie oats. [There is one instance of twenty-one bolls, three firlots of Poland oats, being reaped from one acre, which is equal to one hundred and thirty bushels Winchester measure; but this is a solitary case; sixteen bolls of this kind of corn (ninety six bushels) is no uncommon crop.—The Scotch acre is to the English as five to four nearly.] On the other hand, were these kinds of corn sown both at the same time upon *poor* land, the case would be just reversed; for the crop of grain from the Blainzlie seed would exceed the Polish oat in the proportion of two to one nearly, and the straw would exceed the other in the ratio of four to one at least.

The practical inferences that may be drawn from these facts are obvious; but they are so important, as to deserve to be dwelt upon a little. Should it have so happened that one of these kinds of oat only was known in a particular district, and the other sort only in another district, it is plain that the farmer in one district must have adopted a practice in regard to the culture of that kind of corn, that would have been totally incompatible with that which was found from experience to succeed best in the other. They might thus justly, as they thought, have accused each other of bad management, or even of stating facts falsely; but what is of more importance to be adverted to is, that in neither of these districts could the farmer have derived nearly the same profit from the culture of this crop that he might have done, because, in either case, some part of his land must have yielded a deficient crop, compared to what it might have done by judicious adaptation of the crop to the state of his fields.

As the same variations doubtless take place in regard to the varieties of all other kinds of corn, and as these variations are diversified in regard to a vast number of particulars, it must follow, by the same mode of reasoning, that, until all these varieties are fully known, and their specific peculiarities distinctly ascertained, the farmer, to continue our former allusion, must continue to work upon materials that are, in almost every case, much worse adapted for his purpose, than others would be which he might attain were they known to him; and thus the general produce of the country must suffer a most prodigious abatement from what it might have been, without costing one shilling of additional expense. To ascertain facts of this nature is, therefore, an object of great importance, and falls exactly within the province of an experimental farm.

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* A respectable Naval Officer has found it to answer completely, both in England and in the West Indies. He puts some tar in a barrel, fills it with water, stirs it well about, and in a few hours it will be fit for use. It effectually destroys that kind of vermin that attacks gooseberry bushes, and, by merely watering the ground, it kills worms, grubs, &c. at a considerable depth under the surface. It might be worth while to try it on grass ground injured by worms, ants, &c.

But the diversity in regard to animals is perhaps still greater than in vegetables, and the distinctive peculiarities of the varieties of each species are certainly less known. This subject, though of infinite consequence to the advancement of agriculture, has indeed scarcely begun to be sudied, or, where it has been at all adverted to, it has been under the influence of a train of ideas deduced from false principles, or ill founded theories of philosphers and naturalists, which serve only to lead to perplexity or error; incontrovertible facts being continually at variance with opinions that have been too hastily admitted as axioms that require no demonstration.

SALINE MANURE.

A communication from a friend in the South was inserted a short time ago relative to a new composition for manure. Having been fortunate enough to meet with additional information on the subject, it is now submitted to the public.

To the Editor of the Munster Magazine.

Respected Friend,

Having tried thy improved mode of using lime for manure, with some variations, I thought it may be agreeable to thee, to know the process and result.

The ground on which I used it is situated very high, and much exposed to the north.—It was naturally poor, stony ground, but some years ago was exceedingly well manured with dung, since which time it has been much reduced by repeated corn crops—the last two of which were hardly worth reaping. I therefore concluded to manure and plant potatoes in it, and not having sufficient dung for the whole field at hand, I hastily resolved on using lime slacked with pickle on an acre of it, which I did in manner following. I drew forty barrels of lime, and landed it convenient to water, also two and a-half cwt. of rocksalt; and had each load of lime slacked, as soon as it was dropped, with pickle made of the rocksalt, at the rate of seven pounds to the barrel of lime, dissolved in as much water as I found necessary. A hint I got from the person who sold me the rocksalt I found very useful in dissolving it, viz. to put the rocksalt moderately broken into a hand-basket, and to suspend it in the water by means of a stick run through the handle of the basket, and bearing on the rim of the tub, so as that the salt should be partly exposed to the air; by this means I found the salt dissolve in much less time, than it would if thrown into the water and stirred with a stick, though broken ever so small. I then drew the lime, thus reduced to powder, to the ground which had been previously ploughed, and had it well spread immediately and harrowed, and after a few days had it again ploughed into narrow beds, as I thought it too stony for drills, which I approve of most when practicable.

The potatoes planted were mostly of the kind called Horse potatoes;—there was one bed of Minions, and one of Red Apples.—The whole crop was very fine, except where a stripe of the field was blasted; the limed part fully as good as the dunged part: the Red Apples in the former were the best I saw this year, and many of the Horse potatoes were very large. This manure was prepared and put out in the third month (March) last, and the potatoes immediately planted.

Thy friend,

Lough-view,
26th of 11 m. 1819.

JOHN ALLMENT.

☞ Cultivator is received.

CURRENT PRICES IN DERRY.

Oatmeal,	...	14	0	*to*	15	0	*per cwt of* 120*lb.*
Oats,	...	0	10	–	1	0	*per stone.*
Barley,	...	0	0	–	0	0	
New Potatoes,		0	3	–	0	4	
Beef,	...	0	3	–	0	7	*per pound.*
Mutton,	...	0	3	–	0	5	
Veal,	...	0	5	–	0	7	
Butter,	...	0	8	–	0	10	*per pound of* 18 *ozs.*
Old Flax,		34	0	–	45	0	*per cwt. undressed.*
New, (crop 1824,)		40	0	–	52	6	*per do. do.*
Five hank yarn		2	9	–	3	4	*per spangle.*
Four, do. do.		2	7	–	2	10	
Three, do. do.		2	8	–	2	11	
One, do. do.		2	0	–	2	8	

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N. W. SOCIETY'S MAGAZINE.

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Whether the following piece will have any effect in softening the hearts of such landlords as oppress their tenantry, requiring of them brick, without furnishing straw, it is hard to say. Lessons of this kind it is apprehended are not much regarded—and yet nothing can be more certain than the fact, that it is cruel mockery to urge tenants to make improvements, while the hope of a fair remuneration is denied them. Convince a man, or even a child, that to exert himself in a particular way, will be attended with an ample return of pleasure or of profit, and he will ply his task, with the animation inspired by hope;—but crush his spirit with disappointment, and cramp his faculties by the withering hand of poverty, and he resigns himself to indolence, or hurried on by despair, he rushes into guilt, and wreaks his vengeance on that society to which he ascribes his ill treatment.

Considering that brevity is a great excellence in giving precepts, we have taken the liberty of abridging *Cultivator's* production.

To the Editor of the N. W. Magazine.

Adage, parable, and fable, have ever been favourite and powerful vehicles in conveying the lessons of truth to the public, and of imprinting their moral on the memories of the hearers. Among the most successful of fabulists, is Æsop—His animals were surely rational; the roarings of his lions have fixed the attention of ages, and if even when his asses have brayed, philosophers have desired "that note again," surely the cackle of the goose, the bird that saved the Roman capitol, will be translated, and not without effect. —"A certain man had a goose, which laid a golden egg every day; but not contented with this, which rather encreased than abated his avarice, he was resolved to kill the goose, and cut up her belly, that he might come at the inexhaustible treasure which he had fancied she had within her. He did so, and to his great sorrow and disappointment found nothing."

Application.—How many of us of all ranks in society, who, by the blessing of Providence, enjoy our golden egg of comfort, or even often of more than comfort, of joy, inconsiderately kill the goose, and find nothing but sorrow and disappointment. Do not landlords kill the goose when they rip open the belly of the country with rack-rents, which are only promised to be paid, and thus lose the golden egg?

A landlord should be as jealous of letting a farm for more than it is worth to a good industrious tenant, as most of them now are of letting it for too little; short leases only should be granted, and to resident and cultivating tenantry, who, if they improve their ground, and are regular in yielding the golden egg at the stated time, ought to be morally sure of a renewal—any uncertainty there would be cruelly ripping up the goose. Arrears of rent, contracted when human wisdom could not ward off calamity, should not be rigorously exacted; they were the result of a terrible and protracted war, and ought to be considered in the same light as the famine and pestilence which followed as chastenings sent upon all classes, proprietors, middlemen, and cottiers—evils which it is the common duty of all to alleviate, instead of extending the baneful evils of those times unto the present or future days. I know one gentleman who had £3,000 per annum, who kept a carriage, and stood in high estimation in this county. He had the BRAVERY to give up his carriage, to quit his establishment, and reduce his mode of living so as to meet his lessened income. He reduced the nominal rent roll to its real amount—he gave quittance of all just arrears—got rid of tenants who would not suit an *honest man*—set his ground so as to live and let live, and those who hold under him hold up their heads again—old and evil days are gone.—And while others have destroyed both geese and eggs, he is in the peaceful enjoyment of both.

Your's

SOUTHERN CULTIVATOR.

ON THE SALINE COMPOST.

(From the Munster Farmers' Magazine.)

Sir—In compliance with your wish, intimated to me by our excellent secretary, Lewis Gibson, Esq. that I should report the trial I made with your valuable saline compost, I have the pleasure to inform you that I personally superintended the mixture, and application of it on one acre and a half of very poor light land, from which I never could get even a tolerably good crop before.

I had the compost made nearly three months before use, and turned, and well intermixed once in each month; and, on the 15th of April, I applied it to the bottom, sides, and tops of the drills in the same proportion as I would a fair top dressing with sand; I then put in the sets, and treated the drills in every respect the same as is usual with farm-yard manure. After the first moulding they looked very unpromising, but after the second moulding they improved wonderfully, and looked in every respect equal to my other potatoes.

On Saturday last I ploughed out as good a crop of swell-grounds, black-apples, and horse-potatoes, as I ever had off the best part of my land with farm-yard manure.—The half-acre of horse-potatoes I accurately measured, and found the produce to be twenty-seven barrels of twelve weights each, which is rather more than an average crop of any part of my farm. I had the same kind of potatoes last year in another part of the same field, and which was thought the best part of it, and although well manured with stable-dung in the drills, I had not forty barrels to the acre.

Another great advantage I found in the compost manure, was the destruction of the grub worm, which always in that field injured every potato. In the mixture of the compost I conformed exactly to your directions, except in dissolving the rock-salt, which I did with salt water instead of fresh, as I thought a greater quantity of salt would more effectually destroy the grub.

As the ground seems much improved by the compost, I shall be induced to carry on the trial, and drill wheat into it immediately, and will let you know the result next year.

I have now to congratulate you on the success of your invention, which I have not a doubt will be of great advantage to the country, as it is a cheap manure, and within the reach of most farmers. I kept an exact account of my expenses, which did not amount to more than three pounds fifteen shillings an acre, including labour, but not my horses, as the lime may be drawn when there is little for them to do.—I am, Sir, your's very truly,

WALTER ATKIN.

Cary's-town, Nov. 8, 1818.

ON THE SAME.

By the Editor.—We stated in a paper on saline manures, published in the 22d number of this work, that many agriculturists had undertaken to make experiments on a compost of lime, slaked with a solution of common salt, and mixed with earth, as a manure for potatoes; and that we expected to be able in this number to communicate the results. It will be seen by the preceding pages that we have not been dissappointed.—It appears that the manure has, in many experiments, supported the opinion which, from two year's experience, we had formed of its efficacy. We must acknowledge to have found ourselves, and to have heard from others, that in some instances it has not this year been successful; and we regret that accounts of those experiments, in which it has been attended with disappointment, have not, though earnestly invited, been transmitted to us for publication. From all the information, however, that we have been able to obtain, the trials in which it has succeeded, have been much more numerous than those in which it has failed.

The last season, we have reason to think, had been peculiarly unfavourable to its beneficial operation. Many of the foregoing reports have stated, that the plants, for some time after their first appearance, were weak and delicate, and we have usually observed the same effect in our own experiments of this and the preceding years. It will be recollected, that the weather in last June was particularly ungenial. Cold, northerly, winds prevailed throughout that month, with frost sometimes at night, and vegetation of every kind appeared to be in some measure suspended. Under such unfavourable circumstances, in exposed situations with a northern aspect, the feeble plants manured with saline compost could not so well contend with the adverse weather, as those invigorated from the commencement of their growth with putrescent manure, and accordingly, in some instances, they were materially injured. Early varieties of the potato were more exposed to this misfortune than those of slower growth, and the failures we have heard of, were mostly with those of the former description. Indeed, in any season, we believe the saline manure, from the slowness of its operation, is not suited to the very early sorts of potato, and, for the same reason it is best adapted to the Red Apple potato, which takes the longest time to arrive at maturity. An experiment, however, fell under our observation, in which an excellent crop of a remarkably early kind, called the Quarry potato, was produced by the saline manure. In a comparative experiment, made this year by ourselves, with that and other early varieties, in a field sloping considerably to the north, the dunged part was much superior to that manured with the compost, while in the greater portion of the same field, the Red Apple had the advantage in the compost, and was abundantly productive.

In the paper above referred to, we suggested the prudence of caution in the use of saline manures, from our experience of the ill effects of an over-dose of the saline material, of whatever kind, on the crop at least to which it is immediately applied. With a view to ascertain the *maximum* proportion in which the salt may be safely and beneficially used, we made some experiments this year, and without pretending to have yet attained that object, we have, we trust, made a further approximation to it. We treated some beds intended for some Red Apple potatoes, with the different proportions of six, nine, and twelve pounds of rock-salt to the barrel of lime, (which, as usual, was applied at the rate of forty barrels to the acre) and found that the best of the three was that to which nine pounds were given, and that the proportion of twelve pounds was about equal in its effect to that of six. Hence, we are led to think that the relative quantity of salt in the compost may be usefully augmented; and we are further supported in this conclusion, by the successful experiment of Mr. Atkin, who dissolved his rock-salt in sea water. We would therefore recommend that, in future experiments with this manure, the proportion of nine pounds of salt to the barrel of lime should be used, and we are not sure that a still greater allowance of salt may not be found advantageous. The experiments, however, with a greater quantity, should be made on a small scale.

The trials of this manure for a potato crop, some of them on a considerable extent of land having established its claim to the attention of farmers; its pretensions to the important quality of duration, in its beneficial effects on the land, must be left to time. We formerly assigned some reasons, from analogy to soap-ashes, for a favourable prediction in this respect; and can already pronounce on its utility to the succeeding crop of wheat, so far as the only experiment we have yet had an opportunity of making will warrant.—The wheat produced this year on the land manured with the compost for potatoes in the preceding, though greatly injured by the prevailing distemper—the rust, amounted to eight barrels, of twenty-stone to the barrel, and the straw, to the unusual weight of two and a half tons, to the English acre. We were somewhat disappointed, we confess, by this crop being affected with the rust, as we entertained strong hopes that the saline ingredient would have operated as a preventive of that mischievous disease. But though we now find that it does not afford security to wheat, when applied to the preceding potato crop, yet we may infer, that it has had the effect of materially diminishing the extent of the disease. The field is much exposed to the north, and therefore could hardly escape the prevailing malady, arising, we believe, from the inclemency of the month of June; but that it would have suffered more severely, if prepared for in the usual manner, is evident from the condition of the two beds that had been manured with dung in the preceding year, the wheat of which was almost rotten.

Those who prefer making the experiment with drill potatoes, should adopt Mr. Atkin's method of placing the manure on the sides and top, as well as at the bottom of the drills, or, which may be equally advantageous, should spread it on the land and plough it in before the drills are opened.—Either of those modes will be more particularly necessary, if the additional quantity of salt be used. CORK, NOV. 1819.

On the employment of Muriate of Lime as a Manure.

M. Dubuc, Apothecary and Member of the Royal Academy of Science at Rouen, has employed from the year 1820 to 1823, a solution of muriate of lime, as a manure or dressing to stimulate the growth of vegetables. Of his numerous experiments the following is a short abstract:—

A solution is made of one part of dry muriate of lime in sixty parts of water, which then marks two degrees on the hydrometer. The ground intended to receive the vegetables is first watered with this solution, then the seeds or plants are again watered with it when planted, and this is repeated three or four times during their growth.

M. Dubuc sowed some maize in a light soil, which had been eight days previously watered with the saline liquor, and by way of comparison some more maize was sown on the same soil at six feet distance, but moistened with common water. The former sample was again watered with the muriate of lime from time to time during its growth, and ultimately the plants acquired double the size of those that had received only common water. M. Dubuc has also in the same way promoted and hastened the growth of the large campanula, the lilac, and other shrubs, fruit trees, &c. The same beneficial effect has been produced on esculent plants, onions, and poppies, for which the soil of Rouen is naturally very favourable, and which under this treatment have doubled their usual size. He has thus brought the large sunflower, which generally grows to six or eight feet in height, to reach twelve and fifteen feet, which is its natural growth in Spain.—Some of these plants watered with the muriate of lime, throw out leaves from eighteen to twenty inches in width, and bear flowering heads of twelve or fourteen inches diameter, the seeds of which have furnished half their weight of oil fit for the table, and which exude from their center a very fragrant terebinthinous fluid drying to a resin by exposure to air.

Lastly, M. Dubuc set two beds on the first of May, 1822, with potatoes, selected as nearly equal in size as possible, six feet apart from each other, and watered, one bed with the saline solution, and the other with common water. Both were dug up on the 10th of November, when the crop from the former bed was found generally nearly twice that of the other, giving many potatoes six inches long and twelve inches round, weighing nearly two pounds. These large ones were quite as good food as the other, set and kept equally well to the beginning of the April following. The saline vegetative liquor was only used three times during the six or seven months of the growth of the potatoes, and the leaves and stalks were of proportionate vigour.

It appears that in general three or four waterings with the muriate at long intervals, are sufficient for vegetables submitted to the action of the salt; whose electro-organic powers appears to be very singular, since, according to the observation of M. Labarraque, apothecary, of Paris, the same substance applied to the living body will soon stop the progress of gangrenes and sour ulcers, and promotes the rapid growth of those healthy granulations by which wounds become filled up, and finally cicatrize.

On the cultivation and advantages of Green Crops, &c. &c.

In order to give a correct idea of the value of Green Crops, it will be necessary to treat them under two heads:—first, as manure to the soil; and secondly, as provision for the farmer's stock. There are a great variety of those crops, which, if grown on appropriate soils, will be found equally worth the attention of the farmer, and may be divided into three classes, viz.—Artificial grasses, summer fallow crops, and winter fallow crops. I shall endeavour to shew the peculiar advantages of each, both as contributing to the improvement of the land, and as affording a supply of food for the consumption of the farmer's stock.

ARTIFICIAL GRASSES.

Red Clover.—This grass being suited to a variety of soils, and easily cultivated on an extensive scale, is the most valuable of all green crops, and therefore merits the particular attention of the practical farmer. It is so highly valued in England, that the good agriculturist will sow barley on a field from which he expects but an indifferent crop, solely for the purpose of obtaining a clover crop the following year; and he seldom fails in being amply rewarded by this practice, either from the advantages of its produce, or from the benefit which the land receives by such a preparation. But although red clover is suited to a variety of soils, yet there are some on which it will not thrive well, or be productive, even under the best cultivation; sandy soils and moors are among this number; and it may be generally said, that all soils wanting tenacity, unless in a very fertile state, are not suited to red clover.

Mode of Cultivation.—On the manner of preparing the land for this crop, principally depends its prospect of success; and even on indifferent soils, provided they are of a strong nature, by good tilth it will be brought to profit. However, previous to the cultivation of any artificial grasses, it will be necessary to ascertain the nature or quality of the soil, and what kinds it will be most likely to bring to perfection: the most judicious time of sowing must likewise be attended to, always observing to proportion the quantity of seed to the fertility of the land.*

It is well ascertained that all grasses succeed better when sown with barley than with any other white crop; the land requiring better cultivation for this grain, and the season for depositing the grass seeds being more favourable to vegetation: should grass seeds be sown with wheat, the young plant is liable to suffer from the inclemency of the winter season, or to be partly destroyed by the luxuriancy of the wheat crop, and if sown with oats, the land is in general so badly prepared for this crop, that the grass seeds often fail.† If an oat field is the only preparation for obtaining a clover crop, let the surface of it be well broken by a close and light harrow when the plant is strong, then sow your seed, and roll it immediately: this should be done when the land is moderately dry, and the grass seeds sown when there is a prospect of moist weather. If the soil is very strong or stony, I would recommend covering the seeds with a bush harrow, as, on such soils, the corn would be injured by the roller, and the clover or grass seeds not effectually covered. This mode may be also practised on a field of wheat in spring, before the corn gets too strong, and good feeding insured the following year, instead of an unprofitable fallow.—If the wheat has been trenched in beds, it may be sown the following spring with clover, and the seed covered by shoveling the loose mould in the furrows on the wheat, which will likewise materially serve the corn crop. If the wheat is sown in ridges, the crop should be harrowed length ways in spring, when the land is dry, with a light double hinged harrow, made for this purpose; the pins should be of hard wood, and one horse will do the work effectually: when the land is sufficiently fine sow the clover seeds, and let the field be rolled across the ridges. Clover will do well when sown with vetches, but it will be necessary they should be soiled off early, or made into hay, otherwise their luxuriancy, should they be allowed to remain for seed, would destroy the clover crop in its infancy. Red clover must be considered one of the most valuable crops that can be produced, not only from its value in feeding and soiling, but from its service in enriching and cleansing the land. This I will illustrate by some experiments which I shall state, and am further convinced of this fact, from visiting the farms of some of the most experienced agriculturists in Great Britain, on the soils of which neither stock could be fed, nor corn raised with any benefit, but for the introduction of this crop.

Experiment.—I took some land into my possession which had been for several years cultivated according to the old system, and from which, to judge by its appearance, little profit could be expected. I was informed by the neighbouring farmers, that wheat, barley, and oats, had been cultivated on this farm thirty years ago with great success; but, as they expressed themselves, "the ground was now worn out," and seldom produced more than one-third of its former crop. I was also informed, that several of the fields had been under summer's fallow and wheat, alternately, for the same period, (during which time they had been often limed or dunged at a great expense,) notwithstanding which they were evidently declining in fertility.—The vegetable matter of the soil having been exhausted, the supplying of this I conceived to be the first step necessary towards its renovation; I, therefore, sowed the poorest field on the farm with oats and red clover, (the land not being sufficiently prepared for barley;) but the season proving extremely dry, one-third of the latter crop failed; however, there was a tolerable stock of clover on the field when the oats were taken off, but, as I had reason to expect, I had but a very indifferent crop of corn. The luxuriancy of the clover the following year amply recompensed me for this deficiency; I fed all my cattle and sheep on it for five months; and, as I wished to ascertain its effects on the soil as soon as possible, I ploughed it in September, when about nine inches high, into beds or sets about six feet wide, and trenched in wheat. This crop grew well, and preserved its colour during the winter and spring, and I observed, that on the parts of the field where the clover had been strongest when ploughed in, the wheat looked most promising, and ultimately proved most productive. The crop averaged upwards of seven barrels (20 stone) an acre, which was near two barrels an acre more than this field had produced under any other system, during twenty years' cultivation.

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* It may be considered as a general maxim, that lands in an unfertile state require more seed of any kind, than when in high tilth or fertility. The plants on rich soils strike out collateral shoots, which, by their luxuriancy, furnish the ground, and which, if sown too thick, would not arrive at perfection; but inferior soils not being sufficiently productive to promote a luxuriancy of growth, this deficiency must be supplied by sowing a greater quantity of seed.

† Oats being an exhausting crop, and absorbing a quantity of moisture, deprive the grasses of their nutriment; besides they occupy more of the surface of the land than barley, and prevent the free growth of the clover plant.

Experiment.—On a field of two acres, the surface of which had been pared and burned two years before, and had since produced a crop of potatoes and a crop of wheat, I sowed barley and red clover the first week in May: the corn yielded indifferently, but the clover was most luxuriant. I cut it twice, two years successively, and then ploughed it for potatoes; it produced an excellent crop without one load of manure. Notwithstanding the great advantages to be derived from red clover when sown on soils to which it is suited, it is by no means a beneficial crop under other circumstances. I have known instances in which soil, naturally fertile, and which produced abundant corn crops, would not yield good crops of red clover, but which when sown with white clover, although under the same management, produced abundantly. It is therefore necessary to recollect, that most soils have their favourite grasses, and that it is by an appropriate cultivation of those grasses, that the farmer will be likely to succeed in bringing them into profit.

Mode of Treatment.—Clover should not be fed by any kind of stock until it gets strong in spring, unless it should prove very luxuriant in October or November, and the land dry; in such case, lambs or young pigs may be turned in to eat it lightly, but when treated in this manner, they should be removed, as they would otherwise destroy the heart of the plant. Though indifferent strong soils will produce valuable crops of red clover* when brought into good tilth, yet, as on such soils the object of the farmer should be their improvement, the crop should be consumed on the land, by keeping on a sufficient number of black cattle, sheep, or other stock, to prevent the clover from getting too rank, otherwise much will be lost, as few cattle will eat it when it becomes hard and stalky. But to convert this crop to the greatest profit, and to benefit the land most effectually, the farmer should be provided with a sufficient number of hurdles† to enclose a proportion of the clover crop, which, according as it is consumed, the pen should be changed to a fresh place, and so on until the crop is fed off: should any part of the crop become very luxuriant during this process, it should be mown for hay or soiling, and the second growth fed by hurdling,‡ as before. The practice of feeding sheep in this manner is adopted very extensively at Holkam, and is particularly calculated for dry and light soils; it is not only economical with respect to the consumption of grasses, but stock, especially sheep thrive better from having a fresh bite daily, and from not being permitted to range indiscriminately. The land is likewise more materially improved in this manner, as the droppings are better trod into the surface, and are not so readily dissipated or dried up, as when scattered generally over the land. Red clover being a biennial plant, should be always ploughed in after the second year; although, perhaps, on rich soils it may afford a tolerable crop for feeding a third season; however, as the roots become dry by remaining too long in the land, it would be advisable, particularly on poor soils, to plough them in when in their most succulent state. This mode is practised in many counties in England, in the following manner:—After mowing the first crop, they let the clover run up ten or 12 twelve inches high; it is then rolled, the field ploughed in large sets and then left in this state for six or eight weeks, during which time the clover roots and leaves are partly dissolved into vegetable manure; the land is then harrowed and ploughed a second time, and a small quantity of slacked lime spread on the surface, in order to promote putrefaction, and harrowed immediately; it is then left to undergo a second process of fermentation, before the seed wheat is deposited, which is generally done about a month afterwards. I would not, however, approve of this treatment as a general practice, as it is not only an expensive process, but much of the benefit to be derived from the clover roots, is lost by cross-ploughing and harrowing, and it will often happen, that as good a crop of wheat can be produced from one ploughing, and then drilling, or dibbling, the seed on the surface. On farms where these modes of depositing the seed is not practised, it would be advisable to plough the clover ley into sets, or beds of six or eight feet wide—harrow them, and then cover the seeds, by digging and shoveling the furrows. By ploughing down the clover, and not stirring it afterwards, the crop of wheat receives the whole benefit to be derived from the decayed clover, which is the principal nutriment on which a crop sown in this manner often depends. Some farmers recommend ploughing the ley six weeks or more before the wheat is sown in this manner, but in many instances this is not advisable. Should a wet season follow after ploughing strong or wet soils, they would be in a bad state to receive the seed corn, and land inclined to root weeds would be overrun with dirt, if ploughed early, before the wheat could be got in; it is therefore more prudent, except in particular cases, to plough the land as near as possible to the time of sowing. Besides, by deferring the ploughing until the time of sowing, the land can be further improved either by continuing to feed the crop of clover, or by permitting it to grow more luxuriant, preparatory to its being ploughed in.

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* After red clover, or any crop that adds a body of vegetable matter to the soil, lime will be of much service when the land is broken up, as it will hasten the decomposition of the vegetable matter, and convert it more effectually into food for plants.

† I have seen strong netting of twine made on a wide mesh, and fastened on short poles sharpened at one end, which answer this purpose equally well.

‡ The benefit that might be derived from a red clover crop on poor soils, is often counteracted by being mown; however, if fed the first year in the manner directed, it may be cut once the second year without any injury to the soil.

As provision for Stock.—Red clover, when sown on strong soils or land in good heart, is most productive, and will afford two, and sometimes three, cuttings in the season, without injury to the land.* In this case, soiling will be the most economical and beneficial mode of consuming the crop; it will be, therefore, necessary to hold over a sufficient quantity of straw to litter the cattle during the summer season, as the manure collected in this manner is one of the many advantages to be derived from the use of green crops.—The stock should be particularly attended to at the commencement of this change, as they are subject to disorders of the stomach and bowels, if allowed too great a quantity of this nutritious food: they should also get a proportion of hay, or some dry food, to correct any bad effects that might arise from the green clover, and they should be watered regularly twice a day in dry weather, and in moist weather once. Many farmers cut the hay and straw for this purpose, both for horses and cattle, and others steam the hay for them, conceiving that it goes farther, and is more wholesome. Mr. Curwen is satisfied that all kinds of fodder, both for working horses and cattle should be steamed, and has experienced that all cattle are more healthy on food prepared in this manner, and likewise that much fodder is saved. It has also been ascertained, that horses that have not throve on green food given in the ordinary way, have been brought into good condition by cutting this food, and mixing some cut hay or straw among it. This practice is certainly worth the attention of every farmer who is extensive in tillage, as the expense of keeping horses at grass is very heavy, independent of their not being able to endure near the work as when fed with cut soil and hay. The manure also accumulated in this manner is of far superior quality than any that could be made by foddering cattle in the winter months.

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* I was informed by a very intelligent farmer, who had cultivated clover with great success, that on a clover ley, which he had mown twice for two years successively, he had a better crop of wheat than on an adjoining field of a similar soil, which had been prepared by summer fallowing.

If cattle are allowed to range indiscriminately through a clover field, exclusive of the waste that must consequently follow, many accidents may happen from their eating too greedily: it would be, therefore, prudent, until they become accustomed to this luxuriant feeding, to have them carefully herded, and only allowed to remain in the clover until they have sufficiently filled themselves, and then changed to an adjoining pen or pasture field to ruminate; in this manner they may be changed alternately, as often as it may be necessary.

To save it for Hay.—The crop should be mown when in full blossom, and let remain in the swarth twenty-four hours; it should then be turned, breaking the swarth as little as possible; on the third day after cutting, if the weather be favourable, and the crop not very heavy, it may be raised into small grass cocks, made loose to admit the air thro' them: these must be re-made the next day, and if in this state they are likely to become too dry, they may be formed into cocks of a larger size—three or four of them may be put together. Mr. Curwen recommends tying the clover into small bundles, and placing them together like stooks of corn. This, in changeable weather, is a safe practice, and prevents the necessity of stirring the crop too often, which must be the case according to the general practice in a wet season, and by which it is too much dried, and loses its succulency and colour. In the bundles it will soak by degrees, and, should the weather become very wet, it can be further preserved by capping. It is necessary here to remark that all artificial grasses are more difficult to make into hay, in consequence of their weight and succulency, than natural grasses, as they require a longer time and a more favourable season to save them, therefore should not be cut for this purpose in moist weather. If broken out on the field, their juices would be dried up before it would be safe to collect them; and if gathered too soon they would heat in the ricks, and their colour and quality would be much injured.—*Burroughs on Green crops.* (*To be continued.*)

An account of all the flax imported into Great Britain, distinguishing the proportion for England from that of Scotland.

FLAX UNDRESSED.

	England.	*Scotland.*	*Gt. Britain.*
	cwts.	cwts.	cwts.
1817	219,181	193,252	412,433
1818	229,617	196,641	426,258
1819	229,520	175,207	404,727
1820	190,230	191,590	381,821
1821	264,651	291,114	495,765
1822	318,173	284,660	602,834
1823	296,511	250,585	547,096

An account of the number of ships, with the amount of their tonnage, engaged in the cod and herring fisheries in each of the four years preceding the 1st of January, 1824.

		Cod and Ling.		*Herrings.*	
		Ships.	Tons.	Ships.	Tons.
Year ending 5th April,	1821	103	3,760	43	1,829
	1822	79	2,711	49	1,651
	1823	61	2,236	99	3,357
	1824	68	2,146	129	4,198

The above return applies only to vessels that have prosecuted the fisheries with a view to the bounties allowed by law.

CURRENT PRICES IN DERRY.

Oatmeal, ...	14	0	*to*	15	0	*per cwt of* 120*lb.*
Oats, ...	0	10	–	1	0	*per stone.*
Barley, ...	0	0	–	0	0	
New Potatoes,	0	3	–	0	4	
Beef, ...	0	3	–	0	7	*per pound.*
Mutton, ...	0	3	–	0	5	
Veal, ...	0	5	–	0	7	
Butter, ...	0	8	–	0	10	*per pound of* 18 *ozs.*
Old Flax,	36	0	–	45	0	*per cwt. undressed.*
New, (crop 1824,)	40	0	–	52	6	*per do. do.*
Five hank yarn	2	9	–	3	4	*per spangle.*
Four, do. do.	2	7	–	2	10	
Three, do. do.	2	8	–	2	11	
One, do. do.	2	0	–	2	8	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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ON THE SALMON FISHERIES.

(By Sir Humphry Davy.)

1. There are two species of the genus *Salmo*, caught in the Salmon fisheries of Great Britain and Ireland. The first Salmo *Salar*, is by far the most important, as an article of food and commerce. It is distinguished from the second, Salmo *Eriox*, by its greater size when of the same age, by possessing a smaller, and more pointed head, a more slender tail, a greater diameter in proportion to its length, fewer and smaller spots, and other characteristic marks well known to the water clist, but which it is unnecessary here to describe.

The salmo salar is the common *salmon*; the salmo eriox is known by different names in different districts such as salmon peal, sewen, bull trout, but its most correct appellation is sea trout.

These two species, when of the same size, are sometimes confounded by ignorant persons; but without minute examination, they are easily distinguished by an experienced eye. There is a very remarkable difference in their habits; the stomach of the sea trout is generally found full at the time of its migration from the sea, while that of the salmon is as generally empty.

2. Fishes in general multiply their species by eggs, which are impregnated out of the body; and which require the contact of water saturated with air to render them productive.

Fishes that spawn either in the sea or in lakes, almost always come to the shallows, and deposite their eggs upon vegetables, which by their agency keep the water saturated with air, and their season of breeding is in general that of most animals, in the spring; but the salmo genus (I speak of those individuals belonging to it, the habits of which are well known) multiply their species in winter; and they require *running* water for this purpose, *water saturated* with air. It has been proved by the experiments of M. Jacobi, that the egg of a salmon or trout impregnated, will not produce a fish in still unchanged water; and that for this purpose, it must be constantly washed by fresh portions of water, in a rapid stream or under a fall.

3. These circumstances show the necessity for that wonderful instinct of the salmon, which preparatory to the breeding season, quit the sea, and make their way through rapids, over falls, and through great lakes to the upper parts of rivers, where their eggs may be deposited in a pure aerated water.

The salmon requiring much food, and depositing a large quantity of spawn generally occupies large rivers, having a number of tributary streams. The sea trout on the contrary, though found in large rivers is more common in small ones, and scarcely ever penetrates so far into the interior as salmon.—Sometimes indeed, in very small streams, it deposites its spawn almost close to the sea, in gravel, where the stream meets the wave at high water mark.

The different habits of the salmon and sea trout are well demonstrated in the Moy near Ballina, in Ireland. There is a large pile in this river close to the town, and below the fall a considerable stream joins the Moy.—The salmon leap this fall; the sea trout almost all spawn in the smaller stream, a few miles from the sea.

4. Salmon begin to run up rivers generally in March and continue migrating from the sea till October or November; but in the early spring, there are few in motion. In June and July they migrate in great number, and so in August and September, but this depends upon the seasons, and particularly the quantity of water in the river; the large fish seldom leave, except in floods, unless late in the year, and the one year old fish are almost always abundant in large rivers in July. The sea trout in respect to their breeding season, agree with salmon; but the period of their migration is usually later, particularly in small rivers.

The fish that come soonest into the water breed first: salmon have been known to spawn in the end of October—I have seen them full of ova, even in March. It is stated, that the eggs produce young ones in about 6 weeks; and the young fish, when they have reached the size of smelts, take the opportunity of the first flood to go to the sea or brackish water. Their great migration downward is in March, April, and the beginning of May.

There is much reason for believing that the young salmon do not immediately go far from the river into the sea: for in August and September a fish exactly resembling them in form, and from 10 to 14 inches long (called whitlings and whitings) without visible ova or spermatic secretion, are found in salmon rivers, a mile or two from the sea, and which return to the sea without attempting a further migration. This seems to be a sort of glimmering of that instinct which the next year, when they are fit for propagation, carries them with an irresistible impulse, into fresh water, and to the most remote sources of it. The salmon of 15 or 18 months old is called in Scotland grilse. Grilses differ in size probably from their different ages: those spawned first, under common circumstances, being of the largest size.

The female fish in spawning, deposites her eggs slowly on gravel; the male sheds a white seminal liquid on them, and both fish cover the eggs with gravel. The male is most active in this operation, which hardens the extremity of the mouth, and bends it into the form of a hook.

As soon as the fish have spawned, they begin to move towards the sea, and take advantage, after they have somewhat recovered their weakness, to escape by the first floods, in February or March. The grilse that has spawned, after returning from the sea is called a salmon. The growth of salmon, in the sea is not accurately known, but they seem to double their weight in a season.

5. There is a general complaint of the diminution of salmon in the fisheries. In the Thames it can scarcely be said to exist; and even in the Avon, the Severn, and the Trent, it is becoming comparatively a scarce fish.—The great northern fisheries, and the Irish fisheries, are much less productive than formerly.

The simple remedies for this national evil are:

1. To suffer more fish to spawn, and fish of all ages and sizes.

2. To prevent any fish from being killed in rivers, after spawning.

3. To prevent the young salmon, or salmon fry from being killed.

As salmon and salmon trout, belong in fact, to the river in which they were spawned, and as each variety of salmon or salmon trout, affects a particular river, and always returns to it; and as the old law of the country was framed upon this principle, salmon fisheries never having been considered as belonging to the coast, all stake fishings should be abolished, as they enable persons having no interest in the river, to cut off almost entirely the supply of fish; for salmon do not go far out into the sea, and always return along the coast, scenting out as it were, their own river: and a strong net put across an estuary might destroy in one year, the whole fishery of a river.

No cruives or wears preventing the running up of fish should be allowed; that is to say no close ones, but there should always be a free passage for fish, so that early fish may go up as well as late fish.

No burning should be allowed in a river, by which all spawning fish may be destroyed.

Nets should be limited to a certain size, so as to render it impossible to sweep a river.

No *angling* should be allowed in salmon rivers till May, and not after October.

The period of close time should be extended.

On the Cultivation and advantages of Green Crops, &c. &c.

(Continued from page 336.)

In many parts of England and Scotland, when making their ricks, of clover hay, they put layers of oaten straw or old dry hay through them which absorbs the superfluous moisture of the clover, and converts the straw into nutritious food for cattle; it is likewise a judicious practice, to prevent the rick from heating too much. I do not mean by this to assert, that clover hay should not be permitted to heat—far from it, for it is generally considered that it is neither nutritious nor wholesome for black cattle if it does not heat to a certain degree. Clover hay, however, is not as good for horses as it is for cattle, but when intended for them it would be of much service to sprinkle it with salt, either when making the rick or before they are fed with it.—They will, however, thrive well on it when given by soiling, but it is not so strengthening or good for them as green vetches.

To save it for Seed.—The first crop should be mown for hay, and the land kept clear of weeds during the growth of the second crop, which is the most proper to save for seed, as the first generally grows too luxuriant, and will not produce a plump or sound grain.—When the seed is sufficiently ripe it should be cut with the scythe in dry weather, and when well saved, brought home and ricked; in this state it should remain some time to soak and harden, otherwise it would be difficult to thresh, and much of the seed would remain in the hulls. As the saving this grass for seed counteracts the advantages which the land would derive from it, as a green crop, I would not recommend this practice except on rich soils :* but should the crop be saved for seed, the field should be ploughed as soon as possible after the clover is taken off, and prepared afterwards for wheat or oats according to the nature or quality of the soil.—This is what is termed in many counties in England, a "pen fallow," on which a crop of wheat generally follows. But it must be admitted, that there is no mode of treatment by which the land is less benefited by a clover crop than when it is saved for seed, as it must give two crops to the scythe without receiving any return whatever from the droppings of cattle. Besides in the effort to bring the seed to maturity, the root of the clover plant, which is a great part of the vegetable matter which remains after yielding the seed, is nearly exhausted, and the decayed leaves of the clover, it may be said, is the only return which the land receives during the progress of vegetation.—Red clover should not be sown on the same field too often : once in eight or ten years will be sufficient. By such arrangement the differents parts of the farm can go through a regular rotation of crops, and no one part of the lands in particular devoted to the same repetition of exhausting crops. Can any rational man, acquainted with the benefits to be derived from this system, allow his lands to be tossed backwards and forwards in unprofitable labour, under the idea that he is improving the soil, when he can improve it still more, and improve his own pocket likewise, by growing a green crop. Will not the sound reasonings of experienced agriculturists, or the practice of the intelligent farmer convince him of his errors : or is he still determined to remain in ignorance and poverty, encouraged by the example of his predecessor, or hardened into ignorance by the obstinacy of his neighbour ? If poverty be his plea, I answer, by this system his pocket will be materially benefited. If badness of soil be his argument, I repeat, by this mode of culture alone it can be cheaply and effectually improved.

PRESERVING POTATOES.

To prevent fermentation, and to preserve them from losing their original fine and pleasant flavour, Mr. C. Whiting proposes to pack potatoes in casks while digging from the ground, and to have the casks, when the potatoes are piled in them, filled up with sand or earth, taking care that it is done as speedily as possible, and that all vacant spaces in the cask are filled up by the earth or sand : the cask, thus packed, holds as many potatoes as it would without the earth or sand used in the packing ; and as the vacant spaces of the cask of potatoes so packed are filled, the air is totally excluded, and cannot act on the potatoes ; and consequently, no fermentation can take place. He says, he sailed from New York to St. Bartholomew's, and took two hundred barrels of potatoes packed—and, on his arrival, he found that the potatoes had preserved all their original sweetness of flavour, and were as good as when first dug ; having undergone no fermentation, nor being in the slightest degree affected by the bilge or close air of the ship. This is evidently a very important, economical, and commercial discovery.

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* All plants that remain for seed impoverish the soil more or less, according to their quality. All white crops, such as wheat, barley, oats, &c. draw most of their vegetation from the soil : white peas, vetches, and all leguminous plants are chiefly fed by the atmosphere, therefore land in general is much less injured by growing the latter crops for any purpose, than it is the former.

REVIEW OF A JOURNAL

Of a Horticultural in Tour some parts of Flanders, Holland, and the North of France, in the Autumn of 1817, by a Deputation of the Caledonian Horticultural Society.

The following notices of the agriculture of the country will, we think, be entertaining to our readers; and we would request their attention, in particular, to the raising of clover-seed, which it appears from the note of the authors, as well as from other authorities, has been successfully effected in this country.

"In the course of our evening walk, we were attracted by a novel appearance in husbandry; the labours of the seed-time and the harvest seeming here to be united and contemporaneous. We entered a field of luxuriant rye, part of which remained uncut, but a large proportion of which had been cut down this morning, (12th August.) The crop had been carried aside; well-rotted dung had been pretty liberally laid on the stubble; the Flemish plough was now at work; and, to complete this picture of industry and expedition, a man was actually engaged in sowing *knollen* (turnips) on the ploughed portions of the same field from which the rye-crop had been reaped in the morning. In this favourable climate and early soil, the Flemish farmers very frequently raise two crops in the year on the same field; the latter being generally some kind of green crop for their cattle, such as *reap* or rape, (brassica napus) sown for the sake of the leaves, and *spurie* or corn-spurry (spergula arvensis var.) In Scotland, two crops in the season can seldom be accomplished. If, however the alacrity which we here witnessed were imitated, turnips might sometimes follow early potatoes. Turnip seed may undoubtedly be sown with success late in the season, not only in the end of July, but even the middle of August; by which time early potatoes might, in general, be profitably removed. The common white and yellow turnips would be proper for this crop; the Swedish turnip would not have time to come forward. Late sown turnips, it may be remarked, are not only exempt from the ravages of the fly (the feeding season of the animal being past,) but it has been observed that, on account of their more vigorous state in November, they withstand the winter frosts much better than those sown early, proving equally hardy as the Swedish turnip.

"The plough here used was light, and was held with the left hand alone of the ploughman; it turned over the surface merely; but the soil being naturally shallow, there seemed no motive for deep ploughing, and at any rate a slight furrow was sufficient for a second crop. The kind of wheat cultivated is the common winter sort, (triticum hibernum) and also the red wheat (T. turgidum.) Spelt, or the wheat raised by the ancient Romans (T. Spelta) is likewise sown in a few places; the flour of this last is fine, and is said to be preferred for pastry. Some of the old pasture meadows have a rich clothing of grass, composed chiefly of poa trivialis, pratensis, and annua, interspersed sometimes with large tufts of Cyperus longus.

"We are now in the country where the great purple trefoil, or broad clover (trifolium pratense var.) was originally cultivated.—It is here called *meersche klaveren*, or marsh clover, because it is found to succeed best in their moistest fields. We saw some rich meadows, from which two crops or cuttings, from ten to fifteen inches high, have already been taken, and which would soon yield a third. These fields were manured with Dutch ashes, which are considered as extremely advantageous to a clover crop, and are brought in vessels from Rotterdam, by the industrious farmers of this country. Much broad clover-seed is saved in Flanders, and exported to the more northern parts of Europe. When a crop of seed is wished for, the field is only once cut for green food to cows, and the second growth is allowed to come to maturity. In favourable seasons, the seed is often produced in Scotland; but it has generally been found difficult to separate it from the husk, owing to the want of a proper machine for the purpose, which, however, might easily be procured. In such districts as East Lothian, and the Carses of Gowrie and Falkirk, the farmers might, very generally, save their own clover-seed, merely by railing off with a moveable fence, and reserving uncut, an 8th or a 10th of an acre of the first crop; or, if the second crop is thought to be more prolific in heads and firmer in the stalk, by cutting the first crop from that portion of the field three weeks earlier than usual.*

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* We have had an opportunity of examining a sample of broad cloverseed, saved from a second crop, by Messrs.

"Notwithstanding the distance at which we had now left the sea, plantago coronopus, or bucks-horn plantain, which with us is a maritime plant, appeared on the sides of the pathways. This, it may be noticed, is regarded on the Continent as one of the small salad herbs, although it is entirely neglected by us. Sweet-flag, (acorus calamus) water-violet, (hottonia palustris) and frog's bit, (hydrocharis morsus ranæ) plants not found in Scotland, and not very general in England, abounded in almost all the ditches; the latter only was in flower."

The culture of the hyacinth has been hitherto imperfectly understood in this country, and its bulbs are annually imported at considerable expense. With a liberality not often met with in the way of trade, Messrs. Kreps and Co. florists at Haarlem, presented the deputation with a pamphlet, "containing an account of their method of cultivating hyacinths." The compost used consists of two-sixth parts of grey sand, two-sixths of well rotted cow dung, one-sixth of tanner's bark, reduced to earth, one-sixth of tree-leaves, also well rotted: this compost to be turned over once a month for a twelvemonth, previous to its being used: but we must refer to the work itself for particular directions respecting the culture of this elegant flower. As a proof of the demand for Dutch bulbs it is given as the opinion of Mr. Eldering, an eminent florist near Haarlem, that "about 100 English acres are in the neighbourhood (Haarlem) occupied in producing the different kinds of bulbous, and tuberous flower roots."

In this country, the supply of pears, for at least eight months in the year, either for dessert, or baking, is very scanty; the following method, therefore, of preserving pears for stewing, may be worthy of attention. "The fruit, shortly after being gathered, is carefully peeled with a knife, and is then, without farther preparation, dried in an oven; it becomes shrivelled, brown, and hard, and will, in this state, keep good for several years."—When stewed, "they swell to a considerable size." The pear, thus treated by Mr. Scheevogt, is called the "foppen pear;" but there are doubtless many varieties of pears which might be stored in the same manner.

To the breeders of short horns, kyloes, or west highland cattle, the characteristics of a tulip breeder may appear trifling; but it should be recollected, that fancy has often stamped a value on one of these bulbs, superior to any thing we have heard of being obtained for the finest bull or cow in Britain.

ON MUSTARD.

(From the Ulster Farmer and Mechanic.)

Sir—As I conceive the Ulster Farmer and Mechanic is calculated to render great service to this country, by disseminating useful information among our agriculturists, I am therefore desirous of contributing towards it whatever may tend to promote so desirable an object. Having met with the following remarks upon the cultivation of mustard, I think they may deserve the attention of some of our Ulster farmers. They were some years ago, submitted to the Navan Farming Society, and ten guineas were then ordered to be given in premiums for the growth of this article. L. M.

The seed of mustard which is generally cultivated as an article of commerce, is divided into two kinds—the white and the brown. The latter, from various reasons, is of much more value than the former, but more particularly as it will bring at market one guinea a barrel more than the former—the average of the one being three guineas, of the other two guineas a barrel. This difference in the value arises from the quality of the brown mustard when manufactured being far superior in sauces, and consequently in higher estimation and demand.

Both grow wild through many parts of the empire; but, by cultivation, this article has become a very considerable object of commerce. That sold under the appellation of Durham mustard is of the brown kind, the plant from which it is produced seldom growing to any considerable height; of the other kind, the plant, when at perfection, is fre-

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Miller, at New-house, near North Berwick, Haddingtonshire, equal in quality to any imported seed. On showing the sample to eminent nurserymen and seedsmen at Edinburgh, who deal very extensively in the article, they regarded it as excellent Dutch seed, and declared that it was more plump and shining than any which they had lately seen Instead of mowing and threshing the whole straw, women and children were employed by Messrs. Miller to pluck the brown or ripe heads, and one person was able thus to collect about 8lb. of seed daily.

quently double the height of the former, and in its cultivation requires considerably more space, on account of its more luxuriant growth.

The time for sowing is in April, and it generally arrives at perfection in about four months, provided the soil and treatment be conformably to the nature of the plant.—From this, in many instances, considerable convenience arises, as it may be sown later than any corn crop, and is so soon off the ground as to give place to a winter crop to succeed. The soil suited to mustard is a rich friable loam, and must undergo good tillage from regular ploughing and harrowing in order to secure success—hence, in many parts of Ireland, where potatoes are cultivated on so large a scale, this crop must succeed admirably, as no previous tillage can be better suited to mustard than what necessarily arises from the growth of this useful root. If the soil is not rich the crop will not succeed; hence Mr Young concludes that few farmers have soil that answers for mustard—that is, in respect to England; but in this country this observation cannot hold good, for reasons very obvious to those at all acquainted with the general nature of the soil in most of our tillage counties. Young says, it is common to take three or four crops running; but this practice, were we to reason from analogy, must ultimately be pernicious and unprofitable.

When the soil is duly prepared by previous ploughing and harrowing, so as to render it as fine as if prepared for flax, sow in the seed broad-cast, in the quantity of from four to five pottles an acre; or in a much less quantity when sown with the drill machine. The latter practice to be preferred, as horse hoeing can be used at less expense than hand hoeing, which is in a great degree necessary, as in the cultivation of turnips, after the plants have four leaves, and a second time in about a month after, leaving the plants at a sufficient distance to come to perfection.

The produce is generally from six to nine barrels, of 18 stone each, per acre, for which there is, at all times, a brisk and ready market, the buyers requiring a constant supply to keep the machinery at work, which is necessary to the perfect manufacture of this commodity.

The progress of its growth, when fairly established, is prosperous and luxuriant; and, as the warmer months set in, it tends to ripen with rapidity, of which the cultivator should be watchful when the pods turn yellow, as it is then high time to cut it down, to prevent the loss of the seed, which inevitably follows a neglect of attending to the critical moment when it advances to maturity.

When cut, ledge it for a day or two, provided the weather is fine; and then instantly bind and stack it, forming the stacks of a conical shape, and covering their tops with sedge, or hay, or any convenient top-dressing, to preserve the seed as free from the injuries of moisture as possible. In all this process, the less it is shook the better, as every, "even the slightest motion," robs the pods of some grains.

The brown seed, or more properly speaking, the black, is small, round, and a little compressed, having an acrid bitterish taste, and very pungent smell when reduced to powder. Its cultivation is much the same as the white, but the quantity of seed to be sown per acre, is much less, being from two to two pottles and a half, the produce arising therefrom, from five to seven barrels an acre. And as the seed is of more value than the white, and much more delicate in its nature, every precaution should be taken to secure the stacks from the bad effects of wet weather, by having them well thatched until the moment of thrashing, which is commonly executed in the field, to prevent waste from carriage.

The latter grain succeeds remarkably well on a smart gravelly lime-stone soil, which must be in good heart, free from dirt, and having undergone the necessary tillage.

CURRENT PRICES IN DERRY.

Oatmeal, ...	14	0	*to*	15	0	*per cwt of* 120*lb.*
Oats, ...	0	10	–	1	0	*per stone.*
Barley, ...	0	0	–	0	0	
New Potatoes,	0	3	–	0	4	
Beef, ...	0	3	–	0	7	*per pound.*
Mutton, ...	0	3	–	0	5	
Veal, ...	0	5	–	0	7	
Butter, ...	0	8	–	0	10	*per pound of* 18 *ozs.*
Old Flax,	36	0	–	45	0	*per cwt. undressed.*
New, (crop 1824,)	40	0	–	52	6	*per do. do.*
Five hank yarn	2	9	–	3	4	*per spangle.*
Four, do. do.	2	7	–	2	10	
Three, do. do.	2	8	–	2	11	
One, do. do.	2	0	–	2	8	

ON CALCAREOUS MANURES.

(By Dr. Barry.)

(From the Munster Farmer's Magazine.)

Dear Sir,

If a piece of lime-stone be weighed before burning, and again after burning, it will be found to have lost considerably; and the loss will be in proportion to the purity of the lime-stone and the accuracy of the burning process. The substance expelled by means of the heat was first ascertained by Dr. Black, to be fixed air, or carbonic acid gas: and the quantity of it which escapes in the burning of lime, when collected and weighed, is precisely equal to the difference of weight between lime-stone and quick lime. In 100 parts of pure carbonate of lime, the loss in burning will be 44; and this having been determined by the most accurate experiments, furnishes a criterion which may be of the utmost advantage in examining the comparative purity of different lime-stones. For instance let a piece of lime-stone of 300 grains be weighed exactly, and burnt in a strong fire; let it be weighed again upon cooling, and if it has lost 44 per cent. or 132 grains, the lime-stone is of the purest kind; but as it never happens, that any of our lime-stones are so pure as this, in any two given specimens, the one which has lost most weight in burning so as to come nearest to this, is the purest, and the quarry from whence it may be taken should be preferred. Such accuracy may be admissible in preparing lime for building purposes; but for agricultural uses, the proportion of siliceous sand or clay to be found in lime-stone deserves no consideration.

There is another mode of examining substances which contain carbonate of lime, which is more generally applicable, and is so simple that it may be resorted to by persons almost ignorant of chemistry. The carbonic acid, which, as I have stated, escapes from lime in the process of burning, is so slightly united with it, that it may be separated by any of the mineral acids. Hence, when we suspect the existence of carbonate of lime in any substance, if it is first powdered, and then a little spirit of sea salt diluted with water poured on it, the fixed air is disengaged, and occasions a boiling motion called effervescence, which is considered to indicate the presence of carbonate of lime. Any Gentlemen, particularly, living in a lime-stone district would do well to examine every substance resembling marl or gravel by this criterion, by which a mine of wealth, hitherto disregarded, may be laid open to him. Vinegar would answer equally well for the purpose of a test: but if it is the farmer's intention to determine the proportion of carbonate of lime in any substance, he must have recourse to the muriatic acid or spirit of sea salt. The whole apparatus, necessary for this experiment, are a bottle of the acid, a glass funnel, some filtering paper, a small pestle and mortar, and a pair of accurate scales, with a series of weights descending from 100 to a single grain.—Such gentlemen as possess scales for weighing gold, which have long ceased to be of any use in their original destination, will do well to apply them to this purpose.

The filtering paper should be well dried, and formed with the hand so as to fit the inside of the glass funnel.

The acid should be diluted by the addition of two thirds of water. Substances intended to be operated upon should be dried in the air, and kept in bottles well corked.—One hundred grains appear to be sufficient for one experiment.

The generality of farmers are not aware that there is any principle in common between the sea sand and lime, though they have a slight notion of some remote analogy between lime-stone gravel or marl and lime. Sea sand, however, owes the entire of its fertilizing properties to the proportion of carbonate of lime it may contain, which exists in the form of sea shells, sometimes in such a state of reduction, as not to be discoverable by the eye. Suppose then it is intended to ascertain the proportion of carbonate of lime, or what is the same thing, of sea shells, in a particular sea sand; first, weigh 100 grains of the sea sand, previously powdered finely in a mortar; secondly, weigh the filter and enter down the joint weight of the filter and sea sand; thirdly, having poured the diluted acid into an open glass vessel, put the sea sand by little and little into it, waiting for the cessation of the effervescence each time, before a fresh quantity is thrown in; fourthly, having placed the filter, weighed as above, in the glass funnel, and the latter in a glass vessel or bottle, pour the acid containing the sea sand slowly into the filter; and having allowed it to stand a short time after the acid, holding the soluble part of the sea sand in combination has passed through, let the filter be repeatedly filled with water, until the water passing through the filter ceases to have any acid taste; lastly, the filter is to be slowly dried by the fire, and weighed, and subtracting its present weight from the joint weight of the sea sand and filter, the remainder will be the proportion of carbonate of lime or of shells contained in one hundred grains of the sea sand. The preference is given to the muriatic acid for this purpose, because it dissolves the lime at the same time that it disengages the fixed air, while the sulphuric acid forms an insoluble compound with it.

(To be continued.)

MEETING
OF THE
NORTH WEST OF IRELAND SOCIETY
AT LONDONDERRY—OCTOBER, 1824.

TUESDAY, THE 12th.

THE COMMITTEE—

1—To receive and examine the Treasurer's Accounts, and Subscriptions paid and outstanding

2—To receive the Reports of the different Branch Societies, and to prepare a Scale of Premiums for the Society and its Branches for the ensuing year.

3—To prepare a Report of the Proceedings of the Committee since the last General Meeting.

WEDNESDAY, THE 13th.

The Show of Horses, Bulls, Cows, Heifers, Tups, Ewes, Swine, Flax, Butter, and Bonnets in imitation of Leghorn, for the different Premiums offered by the Society.

Such persons as intend showing Cattle of any kind, are requested to take notice, that the regulation, requiring that two days' notice of such intention be given to the Secretary, will be strictly enforced.

GENERAL MEETING—THURSDAY, 14th.

1—To elect a President, Vice-Presidents, and Members of the Committee, in room of those who retire, agreeable to the Regulations.

2—To receive the Report of the Members admitted since last General Meeting.

3—To receive the Report of the Committee.

4—To receive Reports from the Secretaries of the Branch Societies of the extent and population of their Districts, and to regulate the same.

5—To receive a statement of the Funds of the Society.

6—To take into consideration a communication from the Worshipful the Grocers' Company of London, for the establishing of an Agricultural Seminary and Experimental Farm at Grocers' Hall, and the Report of a special Committee thereon, and to take such proceedings as may appear advisable to the Society in furtherance thereof.

7—To enquire into the proceedings had respecting the proposed Canal from Derry to Lough Erne.

8—To consider and determine the Premiums for the ensuing year.

9—To receive the Report of the Committee appointed to adjudge the Premiums offered for the different Statistical Reports.

10—To receive proposals for completing a General Statistical Report of the North West District.

11—To receive the Report of the Engineer appointed to complete the Survey of the Coast and Harbours of the North West District.

12—To receive a Report of the Proceedings had towards procuring a Charter.

13—To receive a Proposal for re-publishing the N. W. Magazine, in consequence of the numerous applications made for it.

Committee appointed to regulate the Show of Cattle, &c.

The Mayor,
Sir R. Ferguson, Bt.
Mr. Lyle, of Oaks.
Mr. R. Smith,
Mr. Miller, and
Mr. Foster.

The Society will dine together on Wednesday and Thursday of the Meeting. The different Members will please leave their names at the Bar each day on or before 12 o'clock, under a fine of 5s. each.

Committee appointed to regulate the Dinner, &c.

The Mayor, Sir G. F. Hill, Bart. and Mr. Fenton.

By order,
W. MARSHALL, Sec.

☞ The Subscriptions for 1824, will be due on the 1st of October next.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. HEMPTON, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

Vol. II.—No. 44. Wednesday, 22d September, 1824. Price 2d.

BUTTER—TO FARMERS.

We lay before our Agricultural Readers, to-day, an important article on the manufacture of Butter, written by the celebrated Mr. Aiton. We entreat those who peruse it, to put the instructions it gives to the test. The character of Irish butter is fast rising in the English market. Let our farmers persevere in their endeavours, and we shall soon find the boasted Dutch Butter held in inferior estimation to our own.

On the Making and Curing of Butter.

Milk is of all other substances in common use, the most easily affected and injured by improper treatment. Not only does the least impurity mixed with the milk, or on the milk-dishes, injure its quality, but it is readily hurt by exposure to the atmosphere, and by changes of the weather, as well as by noxious effluvia arising from any thing placed near it. In a word, cleanliness and pure air are the *sine qua non* of good dairy produce.

The milk-house ought to be screened as much as possible from the heat of the sun, to be roofed with *turf* and *thatch*, and by no means with slates or tiles. The rays of the sun should never be allowed to enter the milk-house.

The cream and milk should be passed thro' a sieve or search. But I would have that done when the cream was about to be churned. If it is strained when newly drawn from the cow, the milk is hurt by agitation, and more exposed to the air than is necessary; and every chemist, as well as every dairywoman will attest, that the cream always rises better when the milk has been least agitated, and the froth raised in milking preserved. The froth, raised on the milk by a good milker, spreads over its surface in the coolers (provided the milk has not been much agitated), and protects the aroma and most valuable qualities of the milk from the exhaling powers of the atmosphere; in the same way that ale and porter throw up a sort of cream, to protect themselves from atmospheric influence. On that account, no skilful dairymaid will either pass the milk through a search until it has cast up the cream, nor yet use a pail or carrying-dish in taking the milk from the byre to the coolers. The more milk is agitated, and especially when warm from the cow, the sooner will it sour, and the more rancid will the cheese and butter become. I would, therefore, have the milk emptied from the milker's cog into the coolers, and searched when about to be churned. One of the advantages derived from young animals being suckled, instead of being fed from a dish, is, that none of the aroma, or most volatile qualities of the milk, are lost.

I would recommend to place the milk in coolers or standvats whenever it comes from the cow, and before it has cooled. If the milk remains in the milker's cogs, which are deep and narrow, till it cools, and is then turned out into the milk-pans or coolers, it will be [illegible] longer [illegible]tated, than when placed in the coolers at once. And if it is put into one vessel to cool, and into another to cast up the cream, the injury will be still greater. The sooner that the milk is cooled after coming from the cow, and the less it is agitated, the better. In well managed dairies, and when the weather is hot, a small quantity of cold spring-water into every one of the coolers, is put to cool the milk the sooner, and make it cast up the cream; for when milk is strong and thick, it does not cast up its cream so well as when it is thin, though the cream of thick milk is richest. To obtain the richest butter, the first drawn milk should be laid aside, and only the cream that rises first churned.

The coolers may be made of oaken wood, or earthenware well leaded; or, what is still better, they are now made of iron, well tinned in the inside, and with a sort of paint on the outside, that prevents them from rusting.—Mr. Baird, at Shotts' Iron-work, has manufactured great numbers of these iron coolers, and they will soon supersede the use of those made of wood. The iron ones are only about the same price as those of wood, and they are more easily cleaned, cool milk sooner, and will last far longer than wooden dishes.—If the paint on the outside, or tin within, should fail, they can be replaced at a small expense. The milk ought to be placed about three, or not more than four, inches deep in the coolers, and to stand from twenty-four to thirty-six hours, if the whole cream is wished for. In the dairy districts, the milk is now generally placed into stone cisterns, so large as to hold the whole milking; and the milk is let out by a trap-hole at the bottom, and the cream received into a separate dish. But these cisterns are not suited to small dairies.

Sour cream makes as good butter as that which is churned fresh. In fact it is quite impossible to make butter from cream till it is soured. You may commence the operation of churning while the cream is fresh, but it will, and must be sour before the butter is formed; and it is better to allow it to sour in the natural way, than to force on acidity by agitation in the churn. Natural souring does no injury to the butter, but improves it; while rendering the cream hastily sour by severe agitation, softens and injures the butter by too much heat. When fresh or sweet [illegible] is churned, an unnatural fermentation is forced upon it, and that leads to putridity much sooner than when the souring is brought on in the natural way. Milk yielded by cows during the two first days after calving, should not be mixed with other milk, or churned.—The first drawn milk after the cow has calved will, no doubt, yield three times as much butter as ordinary milk. But that milk is so much disposed to putridity, that even the butter extracted from it cannot be wholesome. It has such a high red colour as to render other butter freckled when mixed with it.

I would recommend, by all means, to mix in the salt soon after the butter is churned and well washed, and, at any rate, before it becomes quite firm. If once butter has consolidated, it is much injured by being again beaten or trodden soft, or baked into a paste; and even when that is done, the salt cannot be so easily and completely mixed with it as it would be when it has been merely cooled a little, but not become firm. If the salt is not completely and equally mixed through the whole mass, the butter becomes darker in colour where the salt rests, and whiter and rancid where it has not reached. This is termed *pyety* butter, which always sells at an inferior price.

Mixing old and new butter together, or even that of different qualities, or from many different dairies, some of it good and some of it inferior, is bad management, as that of the worst quality will contaminate the best. A little leaven will in that case leaven the whole lump.

While milk is in the coolers to cast up the cream, it should be kept as nearly as possible in a temperature of about 50 to 52 degrees on Fahrenheit's scale. In summer it may sometimes be difficult or even impossible to keep the milk-house at a temperature so low; but great care should be taken, by excluding the sun and hot winds, frequently washing the floor with cold water, &c. to keep it cool. When the pavement is washed, it should be well dried with a cloth, so as the milk may not be injured by the exhalations from the wet floor. But too much heat at this stage of the process ought not only to be avoided, but great care should also be taken to prevent the milk from being at any time too cold. If the milk is kept too warm, it does not cast up the cream, and soon becomes putrid; and when it is kept too cold, the butter is white, of inferior quality, with little flavour, and neither unctuous nor rich. It is not enough that the temperature of cream be raised before or during the operation of churning, it ought to be kept at all times in a moderate degree of heat, and, if possible, in an equal temperature.

If the cream is in about 54 or 56 degrees of heat when put into the churn, it may be churned without any application of artificial heat, and the agitation in churning will raise it to the temperature of 70 or 74 degrees, at which butter is formed. But if the cream is colder than 54 degrees, I would advise the application of artificial heat to raise it to about 56 degrees, or more. This may be done by placing the cream over night in a warmer atmosphere, or by mixing into it a portion of hot water. But the most proper course is, to prevent the milk and cream from ever becoming too cold. If hot water is mixed into the cream to raise its temperature, it should be poured in by one person, while another is churning, so as it may not melt the cream. Hot water so applied has been objected to, because it was thought to impair the colour and quality of the butter. I would not pretend to say that the water can improve the butter. On the contrary, the butter is often of too white a colour where much hot water has been put into the churn. But this does not proceed so much from the water so applied, as from the milk or cream having been previously too cold. If the temperature of the cream were to be raised, by placing it near a fire or otherwise, without any admixture whatever, or by long and severe agitation in the churn, still the butter would be white, brittle, and of inferior quality. When the milk or cream is too cold at the time of churning, it emits a hard rattling sound when agitated, appears of a white colour, and throws up innumerable white bubbles. But as it acquires more heat, either from agitation or from whatever cause, the sound becomes softer and more soughing, the milk or cream assumes a darker, yellower colour; and as the butter begins to form, and to rise on the surface by churning, which brings on a fermentation of its own kind, the whole mass acquires a yellow colour.

It is necessary, however, to guard against raising the temperature too high, during the operation of churning, otherwise the butter may be much injured even by agitation alone. The process of churning should be conducted slowly; and the more so, if the temperature of the milk or cream has been much above 55° when begun to be churned. In that case, and where but a small quantity is churned together, the churning should not be carried on more than three or four minutes at a time, so as to occupy nearly two hours in churning even a small quantity, and still longer where the quantity churned is large.

Whenever the butter is completely formed, it ought to be instantly turned into fresh and cold spring water; and after being slightly stirred or mixed into the water with a large wooden spoon or skimming-dish, so as the whole butter may be reached by the cold water, and part of the milk may be washed out, the butter should remain in the water about ten or fifteen minutes, so as it may become somewhat firmer before the operation of washing. I say somewhat firmer, but not by any means to become completely cold and firm till it has been well washed and salted. It would be wrong to beat or knead the butter too much while it was very soft; but as it can neither be properly washed, nor the salt well mixed into it, except when it is soft, there can be no propriety in making it cold and firm, by long immersion in cold water, and then to soften it for washing and salting by trampling or baking, or otherwise. It is much better to finish these processes before the butter has been completely hardened.—Three or four changes of water, with a small quantity of salt in each, are necessary to separate impurities from the butter; and the butter must be well stirred, and minutely mixed with a wooden spoon into the water, to render it clean; but it should not be beaten by human hand or foot.

The butter, whenever it is duly washed, should be instantly salted, the salt well mixed equally into every part of the mass; and whenever that is done, the butter should be compactly kneaded into a cask, and covered over on the surface with a wet cloth, if the cask is not full.

I cannot well say what quantity of salt ought to be applied to a given weight of butter. So far as my recollection goes, half an ounce of salt, two drachms of sugar, and two drachms of nitre to 16 ounces of butter, is the proper mode of curing. The sugar improves the taste, and the nitre the colour of the butter; and both of them act with the salt in preserving the butter from becoming rancid.

If the butter is churned, washed, and salted, and stored in the manner I have pointed out, and prime kept in the casks, it will remain free of rancidity for nearly twelve months.

BUTTER CASKS.

It appears that butter of inferior quality is sometimes put in next the sides and bulge of the firkin, where it cannot be detected by that mode of inspection, or otherwise than by turning out the whole butter.

To remedy this evil, and to render frequent inspection easy to every one having interest, the butter should not be placed into a bulged cask, but into one of a conical shape, a small degree narrower at bottom than above, so as the butter may be turned out, and the whole of it seen in the space of one minute, and by the simple operation of upsetting the cask, and lifting it off the butter. When that is done, the butter can be not only seen, but weighed as often as necessary, without any doubt or uncertainty as to the tare of the cask. When this is done, the cask can be put on the butter and turned up as before. This is the form of all the butter casks in the western dairy counties; their superior convenience cannot fail to introduce them to other districts. They are not generally headed in by a cooper, but covered on the upper end with a lid on a broad hoop. But if heading were thought necsssary, it could be done on the broad end of these casks, as well as on them that are bulged, and the head could be taken out and replaced in the one case as easily as in the other. To see the butter turned out would be far more satisfactory to an inspector who is to award premiums, or to a merchant who is to purchase, than the hieroglyphic scratchings on the cask which may be vitiated or misinterpreted.— The only loss sustained by turning out the butter would be, that some of the pickle or brine might be lost. But a handful of salt melted in water would replace it, which should always be done to keep out the air.

PLAN OF

AN AGRICULTURAL SEMINARY

Prepared by the Committee of the North West Society for the consideration of the Members.

To the Members of the North West of Ireland Society.

Your Committee report that they have visited and inspected the proposed situation and premises in the Manor of Grocers, which they consider well adapted for the purpose of an Agricultural Seminary; inasmuch, as the variety of soil renders the situation peculiarly favourable for an Institution, wherein the best practices of improved husbandry may be exemplified, and the theories meriting notice subjected to the test of experiment. The buildings already erected appear capable of affording considerable accommodation, and a plan is prepared for inspection. Two several projects have been under the consideration of your Committee; the first requires the occupation of the premises, called Grocers' Hall, the farm yard and 123 Cunningham acres of land, bounded by roads and plantations, and contemplates the establishment of two separate Seminaries for different classes of pupils; that at Grocers' Hall, to combine the superior branches of education, such as Languages, Mathematics, Natural Philosophy, Chemistry, Botany, with Agriculture, and to be adapted to the instruction of twenty-five young men, advanced in the common course of school learning; which number together with the necessary masters, the house can accommodate. This establishment is intended to include lectures on the above sciences, to which the pupils of the Agricultural School will be admissible. The second or Agricultural School, is intended to consist of 100 Pupils, who are to be subjected to a discipline and division of time and labour, similar to that practised in the Agricultural School at Bannow. The second plan which has been under consideration has reference to an Agricultural School only, and your Committee suggest that sufficient accommodation for it may be obtained at the Farm Yard, by considerable additions and alterations in the present buildings.— This would leave the house, and one grass field behind it, of 11 acres, in the possession of the Grocers' Company, who your Committee are disposed to believe would reserve it for the purposes of the superior Academy, if hereafter it should be found expedient to to establish it. Whichever plan should be adopted, your Committee consider it necessary to raise a sum of £2,500 for outfit, and propose that it should be done by 100 shares of £25 each, to be held in perpetuity, and to be transferable by the shareholders, their heirs, and assigns.

That the names of the shareholders shall be separated, as drawn by ballot, into two divisions of fifty each The first drwn fifty names shall have the power of nominating a pupil each to the Agricultural School, immediately on the opening of the Institution, to be bound as apprentices usually are, for the term of five years, the person nominating, paying annually to the Institution £4 in advance.

That at the end of five years the second division of fifty shareholders, shall in like manner as the preceding, have the power of nominating fifty pupils. During the intervening time, should any vacancies occur, they shall be filled up by the shareholders, as their names in point of seniority stand on the list; each appointment, to remain good for five years from the date.

That should any pupil die, abscond, or be expelled from the seminary, the person who nominated shall have no right to appoint another for the remainder of the period; but the next shareholder on the list, shall be entitled immediately to introduce a new pupil.

That the other fifty pupils shall be sons of farmers subscribers to the North West Society, or one of its branches, to be taken according to priority of application, who shall be at liberty to leave the institution when their friends think fit, and shall pay in advance £10 for the first year—£8 for the second—£6 for the third—and £4 in each of the other two years.

That all the pupils shall be lodged, boarded, and educated, and also instructed in agriculture and gardening; but no pupil to be admissible who cannot read and write.

That the fifty nominated by shareholders, be not less than thirteen years of age, nor more than twenty; or the fifty farmers' sons less than fifteen years of age when admitted.

That the treasurer of the North West Society be treasurer of this establishment. That the other officers of this establishment shall in the first instance be elected by ballot, of such members of the North West Society as shall be present at the April meeting, 1825, or at such meeting as shall be called for that purpose afterwards.

That the establishment be under the direction of a board of managers, consisting of nine persons, to be elected by ballot by the shareholders, of whom two-thirds shall retire annually.

A board of visiters, the same in number, to be chosen in the same way by the North West Society, at their October meeting in each year. And of the joint board, consisting of the managers and visiters, any five may act.

Their duty shall be to superintend the general economy of the Institution, and to make all arrangements relating thereto; to remove, if they see cause, any officer, and to give fourteen days notice in the North West Society Magazine, of a general meeting of the shareholders, to fill up the vacancy by ballot. The joint board alone shall have power to expel pupils, and shall meet on the first Monday in each month to inspect and balance the accounts of the Institution, which shall be published in the North West Society Magazine fourteen days prior to each half-yearly meeting, closed on the first of September, and audited prior to the general meeting in October in each year.

That the joint board publish at the same times a detailed report of the actual state of the Institution. That three auditors be appointed by the general committee of the North West Society, at their meeting in July annually; such auditors not to be members of the joint board.

That proprietors of two shares shall hold one in each division, so as to enable them (if possible) to have always one pupil at the Seminary.

That no persons except members of the North West Society be admitted as shareholders, before the first of January 1825; nor shall any member subscribe for more than two shares before the first of December next.

That any member of the North West Society may, when he pleases, inspect this Institution; and that a book shall be kept in the possession of the principal, in which the person so inspecting shall have liberty to insert any remarks he may think fit, either tending to point out additional improvements, or any abuses which he may perceive in the management of the Institution, duly placing his signature thereto.

In every thing relating to the Institution, not especially provided for, the joint board shall have a discretionary power to act as they shall judge most for its interest, subject to the approbation of the majority of shareholders present, at any half-yearly meeting of the North West Society.

Your Committee have calculated the probable expense of each of the establishments they have had under their consideration, (without a reference to rent of the premises,) and they submit both for the consideration of the Society. On a reference to them it will be seen that a Seminary, consisting of the lower class, will not on the annual payment contemplated, remunerate the expense, and at the same time, pupils of it would not have the advantages of so good an education as they would have if the extended plan be adopted. The estimate made on the extended scale of twenty-five of an upper, and one hundred of a second class of pupils, shows a sufficient fund for all purposes, and your committee could feel no hesitation in recommending the adoption of this plan, were they confident of the first class being filled in the first instance; but as that in their mind is doubtful, they leave the adoption of either plan to the united wisdom of the North West Society.

Dr. *ESTIMATE, No.* 1. *Cr.*

	£	*s.*	*d.*
Salary of Principal Master, ...	200	0	0
Do. Mathematical Master and Assistant for Writing and English,	200	0	0
Professor of Botany and Chemistry ...	150	0	0
Drawing Master, (non-resident,) ...	50	0	0
Principal Farmer, ...	100	0	0
Two Male Farming Servants, ...	40	0	0
Three Male House Servants, ...	40	0	0
Eight Female Servants, ...	100	0	0
Food, ...	1350	0	0
Incidents, ...	200	0	0
Balance, ...	291	17	6
	£2721	17	6

	£	.	*d.*
By twenty-five Pupils in the Upper School, 50 guineas, ...	1421	7	6
Fifty Pupils, 8*l.* average, ...	400	0	0
Do. Do. 4*l.* do.	200	0	0
Produce of Farm, ...	500	0	0
North West Society, ...	200	0	0
	£2721	17	6

Dr. *ESTIMATE, No.* 2. *Cr.*

	£	*s.*	*d.*
Principal Master, ...	150	0	0
Two Assistants, ...	100	0	0
Principal Farmer	100	0	0
Two male Farming Servants, ...	40	0	0
Four female Servants, ...	30	0	0
Food for 110 Persons, 8*l.* each, ...	880	0	0
Incidents, ...	200	0	0
	£1500	0	0

	£	*s.*	*d.*
Fifty Pupils, 8*l.* each average, ...	400	0	0
Fifty Ditto. 4*l.* Ditto	200	0	0
Produce of Farm, ...	500	0	0
North West Society, ...	200	0	0
Interest of 1000*l.* in Bank, part of original Subscription,	50	0	0
Balance, ...	150	0	0
	£1500	0	0

Your Committee cannot conclude their report without expressing how strongly they feel the kind co-operation of Mr. Warner, the Agent to the Grocers' Company, and their hope that the plan which may be approved by the North West Society, will be met by the Grocers' Company with that liberality, which one public body, acting on public grounds, should experience from another.

R. A. FERGUSON.
JOHN FENTON.
WILLIAM MILLER.

Londonderry, September 16, 1824.

LOCOMOTIVE MACHINE.

Such is the extent of British Capital, that though the commercial interest has now reached a much higher point than it had ever before arrived at, there is still no adequate vent for the larger masses of wealth, which during the late war, beat down an imperial power that maintained more than a million of fighting men. Larger sums of money are now lying in various bankers' hands for which no interest is paid: and which cannot be appropriated in any beneficial pecuniary *action.* Among the number of schemes in which to apply this surplus wealth, is one which will constitute an entire *new æra* in our history as a people: we allude to the various companies already formed, or forming for the institution of the locomotive engine. Notwithstanding the stupendous capital required for the numerous companies already formed, *the shares are all filled.* In some instances, noblemen and others have taken as many as two hundred shares each. Canal property is of course shaken; but powerful as the interest of canal proprietors is, it cannot stay this speculation, which will in the end probably supersede canal carriage altogether.

We have seen different designs of the engine alluded to, which is a self-propelling carriage, giving a new application to the power of steam; and will be worked along iron rail-ways; which rail-ways hitherto have been only used for draught horses, with coals, stone, &c. in particular local situations. The carriage will convey about fifty tons weight of goods, with a ten horse power engine, at a rate of six miles per hour. Light carriages for passengers, will move at a rate of from twelve to fourteen miles per hour. The largest undertaking yet projected, is a railway for those engines, connecting Birmingham and Liverpool, with branches to the iron-works of Shropshire and Staffordshire, the potteries, Macclesfield, &c. The shares are all filled; and the bill will be brought in at the beginning of the session.

It will be immediately seen that we have here an undertaking of by far greater importance than is generally imagined; and the effects of which are destined to be felt far beyond its importance as a commercial speculation; and which effects will transcend even the uses of the ordinary steam-engine within the present large sphere of its operations.—Indeed the advantages of the locomotive engines are such that (besides America) we believe there is scarcely a power in Europe, nor in its Asiatic dependencies, but is at this moment considering how to avail itself of the advantages derivable from this discovery.—England, therefore, at the present time, is not only originatng the invention, but receiving orders for machinery from every part of the world, to carry her inventions into practice.

In the conveyance of goods only, there will be a saving of 25 per cent. in carriage; and of 75 per cent. in time; advantages almost incalculable in their amount. Some millions of money are already vested in these different companies; and should the same principle of carriage be extended to the conveyance of passengers, the agricultural produce of the land will be redeemed from the support of horses, &c. and will become disposable to the superior sustenance of mankind. Britain will by the change *increase its dimensions* as we may say, as regards the support of its population, while its *extreme points will be brought nearer together!* And the miseries of Malthus will experience a remove of some thousands of centuries!—These terms imply great changes, but not more so than are perfectly warranted by the premises.

In other points of view, in respect to the strength of the nation, as available to the purposes of national defence, our power may in time, by these means, be increased a hundred fold; for we should be able to pour all the resources of the country, in a very few hours, to any one given point of the empire; and remove them back with the same facility.—The history of past nations has nothing bearing the least resemblance to such advantages: they could remove immense solid masses, by a machinery which is unknown to us; but this art was turned essentially to the objects of splendid and almost indestructible architecture.

At the rate of daring and almost boundless speculation, in which we are, as a nation proceeding, and with the advantage of only a few years of peace, it will be difficult to say what wealth and skill shall not in time achieve, if war, the fell destroyer of the human race, and the tyranny of bad governments, do not cross the opening prospects of prosperity.—In less than another century we may possibly see stupendous castles, self-propelled, carry destruction and vengeance into the ranks of men in war, as elephants bore their castellated legions of old.

It has been calculated that there are already in this country *one hundred millions of money*, that may be applied to any object of public improvement that should pay 3½ per cent. interest. Here we see the difference between free nations and nations of slaves. If ancient Egypt had possessed the characteristics of England and America, she would not have *built pyramids;* nor had Caligula boasted on making his illuminated bridge over an arm of the sea, for a *pageant,* that he had turned the sea into land, and night into day.—*News.*

A great deal has been said in this Magazine on the advantages of clay-burning, but an objection has been started against this practice which if well founded must condemn it. In one of my rambles to the country I happened to go a mile or two from Derry, up the river towards Mr. Devlin's. I was very much struck with the luxuriance of the weeds on each side of the road; one heap of dung or of compost in particular was crowned with such a grove of thistles, ragweeds, &c. that one would suppose the birds of the air might find both food and shelter among them. The wind was high, and the seeds of the thistles were flying about in all directions in such quantities as were sufficient to supply a country-side. In my farther progress I met with a farmer who accounted for the abundance of weeds in a way very extraordinary, but by no means flattering to the lovers of improvement. What would you think! why that clay-burning gives birth to weeds! that town ashes are a most pestiferous thing, for after laying a parcel of them on his land, the place where they were laid might be known from the rest of the field for years afterwards, by the rankness and the abundance of the weeds. Now this is the *theory* of a practical farmer. He allows weeds to overrun his grounds, and he lays town manure on them dirty as they are, the manure does its duty, the weeds flourish and clay-burning is exploded. Unquestionably ashes, or torrefied clay will encourage the growth of vegetable productions in general—of weeds if the roots or seeds exist in the ground—and of useful plants in like manner, and will not stable manure be attended with the same effect?

The same farmer is of opinion that the most effectual way of keeping down coltfoot is to plant drill potatoes, and afterwards lay down the ground with grass-seeds. But if without attacking the coltfoot with the plough or hoe, he merely applied the manure, no matter whether clay, town-ashes, or dung, would he not be encouraging the weed in place of extirpating it? In a country like our's, where the fields are in many cases a bed of weeds, and where even the neatest farmer is liable to have his ground polluted by the general slovenliness of all around him, is it wonderful that weeds should appear more numerous and luxuriant than usual, wherever a spot of ground has been enriched by manure? but if by burning these weeds are reduced to ashes, this is a cleaning process not a defiling one. Or if the weeds while yet unripe, are cut down and rotted in a heap, or dissolved by being mixed with quick-lime, an enemy is thus converted into a friend, or at least compelled to pay tribute to his conqueror.

Before the theory can be received that ashes give birth to weeds in land where they did not exist before, it must be shown by experiment, that when ashes have been applied to land well cleaned, and so circumstanced that it cannot be polluted either by roots or seeds finding access to it, except such are intended to be cultivated on it; weeds have notwithstanding grown up spontaneously. Till this experiment shall have been accurately made, the theory in question can only be considered a veil for ignorance, or an excuse for indolence.—Editor.

⁂ We have received the articles transmitted by our *Munster* friend on *Saline Manures*, &c. for which he will accept our thanks—Ed.

CURRENT PRICES IN DERRY.

Oatmeal, ...	11	0	*to*	12	0	*per cwt of* 120*lb.*
Oats, ...	0	8	–	0	10	*per stone.*
Barley, ...	0	9	–	1	0	
Potatoes, ...	0	2	–	0	3	
Beef, ...	0	3	–	0	6	*per pound.*
Mutton, ...	0	3	–	0	5	
Veal, ...	0	5	–	0	7	
Butter, ...	0	8	–	0	10	*per pound of* 18 *ozs.*
Old Flax,	36	0	–	45	0	*per cwt. undressed.*
New, (crop 1824,)	40	0	–	52	6	*per do. do.*
Five hank yarn	2	9	–	3	4	*per spangle.*
Four, do. do.	2	7	–	2	10	
Three, do. do.	2	8	–	2	11	
One, do. do.	2	6	–	2	8	

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ON CALCAREOUS MANURES.

(By Dr. Barry.)

(From the Munster Farmer's Magazine.)

(Continued from page 344.)

Having been particularly interested in determining the comparative goodness of the sea-sands which are landed at Glanmire quay, I shall state the results of experiments made on two of them, which will serve for illustrations. The first of these sands is when landed of a dark blue colour, and of a fine grain. Having powdered it finely, 100 grains of it were weighed and dissolved in diluted muriatic acid. The filter weighed 32 grains.—When the effervescence had ceased, which proved that the proportion of shell was dissolved, the whole was poured on the filtering paper, fitted in the glass funnel.

In performing this part of the operation, there is some difficulty in washing the whole of the insoluble part of the sand into the filter, upon which the accuracy of the experiment very much depends. To do this effectually, either part of the diluted acid should be reserved to wash it out; or it may be poured back again from the vessel into which the filtered liquor had dropped.

I next filled the filter repeatedly with pure water till it passed quite tasteless. The filter was then dried and accurately weighed.—The experiment being now finished the results were as follow:—

EXPERIMENT FIRST.

	Grains.
Sand	100
Filter	32
	132
Filter and residum	70
	62 grains of gas and soluble matter

There is another kind of sea sand brought to Glanmire, which is of a dark reddish colour when wet, and much coarser in the grain, and is on this account preferred by the country people; but suspecting that it was not so rich in shells as the blue sand, I made a comparative experiment to determine this point, which was conducted as above and gave the following result:—

EXPERIMENT SECOND.

	Grains.
Sea Sand	100
Filter	31
Weight of Sand and Filter	131
Weight of Filter and insoluble Matter	81
Soluble Matter	50 grs.

This leaves a difference of 12 per cent. in favour of the blue sand, a circumstance well worthy of attention, to such as carry sea sand to a distance: as 100 butts of the blue sand contain 12 butts of shells more than 100 of the red sand. The coarseness or fineness of either is not to be regarded; a [illegible] depends upon the proportion of siliceous sand or clay with which it happens to be [illegible]ed, and a sufficiency of either ingredient [illegible] had on [illegible] farms without going to [illegible] considerable expense.

From experiments, made by my friend Dr. Alcock, the farmers in that district are found to have fallen into a grievous error, as they reject a sand which is above 20 per cent. better than the one they carry away. In other words they take with them but 40 butts of shells in every 100; whereas by resorting to the finer sand which is now rejected by them, they may have no less than 61. The preference which farmers give to the fresh sand, probably arises from the quantity of salt they suppose it to contain, to which they attribute its fertilizing properties. But besides that sea-salt seems nearly useless as a manure, the quantity usually found in several sands is not more than three or four per cent. On comparing the two specimens from Ballycotton there was a difference of one grain in 100 in the proportion of sea salt; the fresh pebbly sand containing four grains, and the other three grains, which cannot possibly give the former any superiority. Indeed the fine dry sand is proved to be so decidedly preferable, that the landed proprietors should compel their tenants to make use of it; as 21 bags of gravel can be easily procured at home, if they find it advantageous.[*]

Having made these remarks respecting the advantage of comparing different varieties of sea-sand, and preferring the richest, viz. that which may contain the greatest proportion of shells, or carbonate of lime, I shall now offer a few observations on sea sand, when compared with lime. I have already mentioned that the proportion of fixed air, which may be disengaged from pure carbonate of lime, amounts to 44 parts in every 100. In most of our lime-stones, however, there is an alloy of either siliceous or aluminous earth (flint or clay) which, especially in the purer lime-stones or marbles, does not deserve attention. Now let us suppose a farmer can procure lime and sea sand at the same distance from his farm, which is actually the case at Glanmire, conceive what an immense saving there must be in carrying lime in preference to sea-sand. If the best sea-sand contain 60 per cent. of carbonate of lime, which in fact is little better than lime-stone in its unburnt state, the farmer actually carries home 40 per cent. of what is useless to him.— If the 60 per cent. of shells in the sea-sand were burnt into lime there would be a loss of above 26 upon it; which would leave 34 per cent. of lime. Hence one can easily estimate the waste of labour, which is in other words an unnecessary expenditure of money, when we perceive a man taking sea-sand to a distance from the very place where he can procure quick lime.

In his hundred butts of sea-sand there is in fact what is merely equivalent to 34 butts of lime. By preferring lime he would therefore save the labour of 66 horses, which would much more than cover the greater price of the lime. His manure would be soon drawn home, his horses instead of being exhausted by needless exertion would be fresh for the plough or other employment; and his own time, which at every season ought to be so precious, would be saved. I do not speak of lands in the immediate vicinity of sea-sand, where the carriage is short, because in such situations the sea-sand may be laid on in great quantity, at a cheap rate. But where the distance is six or seven miles I believe there can be no doubt, even supposing other things equal, that the lime as containing the greatest quantity of calcareous matter in the smallest bulk, should be preferred.[*] It is in vain to say that a sprinkling of sea-sand gives an immediate crop to the farmer, when its effects are scarcely visible the succeeding year. If there is any ingredient in the sea-sand besides the shells, which can be beneficial, it must be the siliceous sand which upon a heathy or stiff soil may certainly act favourably by improving its texture; but in the name of common sense why send seven or eight miles for sand or gravel which may be had in abundance at the next rivulet? It may be applied in conjunction with lime, and I will venture to say that the farmer's immediate crops will not only be better, but the ground be permanently improved by a sufficient dose of the calcareous ingredient at a cheaper rate. It has also been said that our farmers have no business for their horses at the time they are engaged in drawing sea-sand; and therefore that they may be as well employed in this manner as be idle. This is a ridiculous argument in the neighbourhood of a road which is an immense thoroughfare, where farmers may receive constant employment, for their horses, which however, I do not recommend; as a judicious farmer can never be at a loss for work without sending his horses out of his own bounds.

In my anxiety to state arguments which I think of sufficient importance to engage the farming interest to attend to a question of some moment, I fear I am trespassing upon your patience and that of your readers. I cannot help adding however, that by similar arguments I persuaded a small farmer, who lived at such a distance, as to be incapable of bringing home more than one turn in the day, to draw lime for part of his field, and sea-sand for another of similar extent. He mixed clay with the lime before it was put out, in a proportion nearly equal to the alloy of clay or sand in sea-sand. He sowed oats in the whole field. I had occasion to observe the crop during its growth, and could easily distinguish the limed portion by the deep green and the strength and luxuriancy of the stalks. The produce was also more abundant, and the quality of the grain superior, in the limed ground. This fact of which the farmer was a faithful and interested observer, assisted by a little calculation on the value of horses and human labour, has made this man a convert to my own opinions, and he declares against drawing any more sea-sand. For a further illustration of this subject, I refer your readers to the appendix of the Rev. Mr. Townsend's Survey of this County, a work which is worthy of the serious perusal of every landed proprietor, and gentleman farmer.

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[*] Garrettstown and many other strands supply matter for similar remarks. The late J. Kearney, Esq. a Gentleman whose strength of mind and extensive information gave great weight to his opinion, is said to have tried experiments, the result of which convinced him that the sand from the sand hills was preferable; and he accordingly endeavoured to make his tenantry sensible of this but without effect. They still continue to take that washed by the tide, and to reject the other.

[*] It is deserving of remark here that many farmers send their horses for Ballicotton sand from a distance of at least 5 or 6 miles, when they have lime much nearer to them, and are obliged actually to cross a lime-stone country to procure it. It is evident from this that they do not consider it as a calcareous manure, but suppose it to have other recommendations, which make it worth the trouble and expense of carriage. They do not even suppose it to contain any lime, although its principal usefulness is certainly derived from this ingredient, which might, as shown above, be procured at a much cheaper rate.

J. M. BARRY.

CHANGES OF THE WEATHER.

Dr. Adam Clarke has lately communicated to the public some meteorological observations, in which he remarks, "from my earliest childhood I was bred up on a little farm, and as I found that much of our success depended on a proper knowledge and management of the weather, I was led to study it ever since I was eight years of age." In this science he states, that he has attained extraordinary success, as the result of which he advocates the weather table attributed to Dr. Herschell, but which the son of that gentleman has recently disclaimed on the part of his late father. Dr. Clarke says, that the accuracy of this table is truly amazing, and that if Dr. H. had lived for no other purpose than to construct it, posterity would have reason to bless his memory. Some of our meteorological readers may perhaps thank us for inserting the table as arranged by Dr. Clarke.

	TIME OF CHANGE.	IN SUMMER.	IN WINTER.
If the new moon, the first quarter, the full moon, or the last quarter happens	Between midnight and 2 in the morning,	Fair	Hard frost unless wind be W. or S.
	2 and 4	Cold with frequent showers.	Snow and stormy.
	4 and 6	Rain.	Rain.
	6 and 8	Wind and rain.	Stormy.
	8 and 10	Changeable	Cold rain if wind W. Snow if E.
	10 and 12	Frequent showers.	Cold and high wind.
	12 at noon till 2 P. M.	Very rainy.	Snow or rain.
	2 and 4, afternoon.	Changeable.	Fair and mild.
	4 and 6	Fair.	Fair.
	6 and 8	Fair if wind N. W. Rainy if S. or S. W.	Fair and frosty if wind N or N. E. Rain or snow if wind S. *or* S. W.
	8 and 10	Ditto	Ditto.
	10 and midnight,	Fair	Fair and frosty.

In general, the nearer the time of the moon's change, first quarter, full, and last quarter is to midnight, the fairer will the weather be during the seven days following; and the nearer to mid-day or noon these phases of the moon happen, the more foul or wet the weather may be expected to be during the next seven days.

Sir H. Davy, Bart. President of the Royal Society, has arrived in London from Norway. Sir H. has been engaged during the months of July and August, in pursuing various philosophical researches, for which the Admiralty granted him the use of the Comet steam boat. He has ascertained, we understand, that his principle of protecting the copper sheathing of ships, by the contact of one two-hundredth of iron is perfectly successful, even in the most rapid sailing, and in the roughest sea.

MANUFACTURE OF KELP.

The improvement which has lately taken place in this valuable article, in consequence principally of the stimulus given to it by the Highland Society, is very remarkable. If it go on as it has begun, but for a short period, it will render the importation of barilla superfluous.

Kelp like barilla, is chiefly used by the soap-maker, the bleacher, and the glass maker, and is valuable in proportion to the quantity of alkali, free or combined with carbonic acid, which it contains, and also in proportion to the soluble matter, principally sulphate of potassa, and muriate of soda. The average quantity of alkali, in good kelp, is about 3 per cent. and in barilla about 11 per cent. But even with so inferior a produce, kelp can enter into competition with barilla in the market, by means of the duty imposed upon the latter when imported from abroad. It appears that besides alkali, the other component parts of kelp, when carefully prepared, are of considerable value as materials in various useful manufactures; that in kelp some of these abound more than in barilla; and that the former possesses valuable ingredients which are not found in barilla at all. This clearly shews the great advantages that would result from improving the kelp manufacture; because in that case all the other component parts, as well as its alkali, would be improved and turned to purposes more useful and various than we are at present able to contemplate.

The best kelps in Scotland were formerly esteemed to be those of Colonsay, Canna, Barra, and a few others which contained about 6 per cent. of alkali. We can state with much pleasure, that the kelp of Ulva (the property of Sir H. Stewart, Bart.) as analyzed in Dec. last by Dr. Fyfe, the celebrated chemist, yielded more than 9 per cent. of alkali besides 65 of soluble matter. And only that the samples were injured by rain in the steam boat which conveyed it to Glasgow, it probably would have yielded 11 per cent. which is fully equal to barilla. We can state on authority that Dr. Fyfe has given it under his hand, that the kelp of Ulva is not only the best that ever came under his inspection, but that he never heard or read of kelp of equal quality.

These are facts very interesting to the public. Barilla we import, at an exorbitant price from Spain, from Teneriffe, and from various islands in the Mediterranean. If by superior science, and superior attention to the kelps of Great Britain and Ireland, we can become independent of an article indispensable to so many important manufactures, it will be an immense object at all times, but more especially during a war with those countries from which the article is supplied. It was stated on authority, last year in the House of Commons, when the duty on barilla was re-imposed, that 120,000 individuals were annually employed in the kelp manufacture in the Highlands and islands of Scotland.

Kelp is prepared by burning the different kinds of sea-weed during the summer months. One of the main difficulties is that of preventing the mixture of earth, gravel, sand, &c.—These as they increase the weight, are willingly admitted by the workmen, who are injudiciously paid by the quantity or weight of kelp made, without reference to the quailty.

The chief improvements made by Sir H. Stewart, are said to be the following:—1st, To exclude all such extraneous substances as those above enumerated, and to induce the workmen to co-operate in that important object, by attempting a plan of remuneration for their labour according to the value as well as the weight of the article produced:—2d, To improve the structure of the kelp-kilns, and to procure furnaces of a far higher temperature than heretofore; also to bestow much more time and labour in stirring the mass, while fused, by means of superior implements; by which mode of management, and by an appropriate exclusion of external air in the after part of the process, a greater portion of the muriate of soda is decomposed, and the quantity of carbonate of soda (the most valuable part) is greatly increased:—3d, To sprinkle the weed frequently with sea water, while in a dry state, and thereby augment the quantity of alkali in the kelp, according to the judicious suggestion of Dr. Fyfe. In this way Sir Henry has succeeded in raising the value of Scottish kelp in the ratio of 3 to 4 or *nearly to 4 times its former amount.* We understand he has greatly extended his own kelp shores, by planting the vacant parts, according to his new and practical methods.—

And [also, that according to the advice of an able chemist, he is about making inland plantations in the neighbourhood of those shores of plants which yield the greatest quantity of kali, such as fumitory, wormwood, &c. He means to cut and collect the crop for the purpose of burning with the kelp materials.—Thus the carbonate of pot-ash will decompose the sea-salt, and a great increase of the carbonate of soda will be the consequence.

The shores of Ulva indeed are extremely favourable for such improvements. The numerous and sheltered bays formed by bold projecting headlands and inlets of the sea, afford the finest situations for the growth of the *Fucus Vesiculosus* and the *Fucus Nodosus*, but particularly of the former by far the most productive of all the sea weeds. It is hoped that Sir Henry will be induced ere long to communicate to the public, his method both of manufacturing and planting kelp on these productive shores.

SALINE MANURE.

From an article formerly published on this subject, the practice of Mr. Dubuc, and its successful result are before the public. It has been already mentioned that the first introduction of this invention was in Ireland, in the neighbourhood of Cork. But one point of difference is remarkable, namely that in France the preparation was applied in a liquid state, whereas in Ireland the dry powder was used. On reference to the 22d Number of the Munster Farmer's Magazine, a very satisfactory account by the Editor of that work of his discovery, and of the steps by which he arrived to it, will be found. In the mean time for the sake of such of our friends as may feel an interest respecting it, the following extract has been made, in which we have confined ourselves to the most important points; those who wish for the detailed account, may find it in the useful publication above alluded to.

The intelligent writer remarks that saline bodies (or mixtures of salt) had been unjustly excluded by some speculatists from the list of manures, and blames that disregard to experience, or inattention to facts which had led to a conclusion so rash and incorrect.—He then states his purpose, thus—" to explain the nature, and describe the effects, of a manure on which we have made experiments, attended, as we conceive, with important results."

Salt, as our outhor asserts, without doubt, has been attended with beneficial effects as a manure.* In many instances, however, it has produced no good effect, and when used largely, has been found to destroy the vegetation of every plant within its reach, for a long period; whereas in other instances, tho' employed to excess, it has had no sensible effect at all. The failure or success has not hitherto been accounted for in a satisfactory manner.

No manure, as Mr. Kearney observes, (see his Treatise on Agriculture) is more justly valued than soap-ashes, for there is none whose effects continue so long. The truth of this is amply confirmed by experience. The usual application of this manure is in compost with earth, as a top-dressing for grass land, in which case its operation, though in the end very advantageous, is generally slow: but when it is used for tillage crops, the benefit is immediate as well as durable. About one hundred and forty Winchester bushels mixed with three or four times their bulk of mould, is the quantity per acre generally applied to grass land. But our author allows one half more not to be too much for an acre of potatoes. He recommends this as one of the best manures with which he is acquainted. And he mentions instances which he had known, of fields which had been manured with soap-ashes twenty or thirty years before, which were still distinguishable from all others, by the verdure, sweetness, and productiveness of the grass. Soap-ashes, when applied to tillage crops, have also the valuable property, that neither the potatoes, nor the corn crops that succeed them, are so liable to be injured by blasting winds, by blight or mildew, as those raised by other dressings.

The great efficacy of soap-ashes on the crops, for which they are immediately applied, and the peculiar durability of the improvement which they produce in the soil, with the other advantages that have been enumerated, appeared to stamp so high a value on this manure, as to have rendered it a subjec of great regret, that it could be procured at those places alone in which soap is manufactured,—that it could be supplied only to a limited extent,—and, that the difficulty of its carriage greatly enhances its expense, even at short distances, and is such as to preclude the use of it whenever the distance is considerable. These reflections suggested to us the important benefit which would be derived to Agriculture, if a similar composition were discovered, exempt from those disadvantages. With this view it was first necessary to ascertain the nature and proportion of the component parts of this substance, and the inquiry was facilitated by a communication from Sir H. Davy to the Board of Agriculture, stating the result of an analysis of the London soap-ashes, made by that celebrated chemist. He found that the soap-ashes where barilla was used, contained, in one hundered parts

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* In Cheshire its fertilizing properties were so well known, that until prevented by the revenue laws, 3000 tons were annually sold to the farmers about Norwich.

		Parts.
Of carbonate of lime,	about 76	Total calcarious matter, 91
Of quick-lime,	about 15	
Of gypsum,	about	5
Of common salt,		1½
Of carbonate of soda,		1¼

The soap-ashes from kelp, in one hundred parts, gave about ninety-four of calcareous matter, in the same state as that from barilla; about three of gypsum; and one and-a-half of saline matter, containing apparently, nearly the same proportions of carbonate of soda and of common salt as in the former instances.

It is maintained that the advantage of soap-ashes is not chiefly owing to the lime contained in them, for two reasons. The first of which is that the quantity of soap-ashes used for an acre (40 barrels) does not contain so much as 17 barrels of lime which is less than half of the lime usually applied to an acre, and from which no farmer would expect any advantageous result. And the second reason is that lime frequently fails to produce any good effect however managed, or in whatever proportion it may be used; as on light land for example exhausted by tillage, and in general where there is but little vegetable matter in the soil: while soap-ashes on the contrary, never disappoint the hopes of the farmer; they have been always found of advantage to every description of land.

Of gypsum and of common salt the other ingredients in soap-ashes, the effects are well known to be so far from uniformly favourable that in the greater number of instances they have produced no benefit whatever. The only substance which remains to be considered in soap-ashes, is the carbonate of soda or mineral alkali, and to this it is conceived they owe their principal value.

Our author is of opinion that no writer with whom he has met, can explain on just grounds the effect of this manure in producing fertility, and he does not attempt to account for it himself, but satisfied with the fact, he proceeds to *consider whether a substitute for soap-ashes may not be applied, a substance of similar composition, equal value, and of incomparably more easy attainment and extensive application.*

While prosecuting these inquiries our author was forcibly struck with an expression in Sir H. Davy's Agricultural chemistry, which seemed to point out a path leading to the easy acquisition of that ingredient in soap-ashes which was so desirable. Speaking of the small quantity of alkali contained in soap-ashes, he says that "lime, moistened with sea-water, affords more of this substance." In place of this a solution of common salt may be used which will produce a similar result. The soda thus obtained is the ingredient which renders soap-ashes so valuable; the power of obtaining cheaply and abundantly a substitute for that manure, at least of equal efficacy, is easily accessible to almost every farmer in the united kingdom. The economy of using salt is thus shewn by our author—the price of kelp (in 1818) was 6 guineas per ton, and this substance afforded but 3½ per cent. of pure soda, while salt could be obtained for £5 per ton, and contains 53 per cent. of pure soda. But the soda is not the only manure obtained in the method recommended. The muriate of lime which is formed by the same process, is likewise a valuable manure. Thus common salt which seldom contributes to the fertility of land, is converted into two substances, each of which promotes in a high degree, the growth and nourishment of vegetable productions.

This theory appears satisfactory, but in no art or pursuit is theory, unsupported by fact, so little to be relied on, in practical application, as in the business of agriculture; and we should expect but little confidence in the positions we have advanced, were we not able to support them by the much surer test of experience. We shall therefore, proceed to state some experiments which we have made on this subject, and which have confirmed, in a great measure, the opinions we have submitted.

A grass field, of a thin moory soil over a wet clayey subsoil, which had been pared, and burned in 1816, and produced a moderate crop of potatoes that year, was manured in the following year with a compost of lime and earth, in the proportion of fifty-three barrels of lime to the acre, except about a quarter of an acre in the middle of it. This was manured with lime, at the rate of only thirty-two barrels to the acre, slaked with a solution of five pounds of rock-salt to each barrel of lime, and mixed with the same kind and proportion of earth, as the lime alone in the remainder of the field. The same sort of potatoes, the red-apple potato, was planted in the whole on the same day, and the entire field was treated afterwards in precisely the same manner. For some time after the plants appeared above ground, they were more promising on the part manured with lime alone; but as the season advanced, the saline manure gradually showed its superior efficacy, in the luxuriance of the stalks, and when the crop was raised, the produce was nearly double the quantity of that which was manured with lime only,—the former amounting to seven tons and nearly one cwt. per acre,—the latter to no more than in the proportion of three tons fourteen cwt. to the acre.

By the success of this trial, we were induced to repeat the experiment on a larger scale this year, with the saline compost in competition with dung, in two fields of different soils and condition, varying also, in one of them the proportion of salt. For the purpose of putting the manure to as severe a trial as we could, we selected a quarter of an acre of the poorest land in our possession, which was ploughed into four narrow beds, and prepared in the usual manner for potatoes. On one of those beds, lime and salt, in the proportion of forty barrels of the former and four pounds of rock-salt to each barrel, mixed in compost with very bad earth, was spread. On the next, the manure was of the same description, except that the proportion of salt was doubled. The third bed was manured with a similar composition to that of the first but in double the quantity, i. e. at the rate of eighty barrels of lime with four pounds of salt to the barrel, to the acre. The fourth bed was manured with stable-dung of the best quality, in the proportion of one hundred and ten single-horse cart loads to the acre.—In this experiment, the dunged bed had greatly the superiority over all the others, but the quantity of dung on that was such as could seldom be afforded on a large scale, and it was besides, in the culture of the crop, inadvertently supplied with a much greater portion of earth from the trenches than the other beds; which, particularly in such a season, must have been a great advantage. The bed manured at the rate of forty barrels of lime and four pounds of salt to the barrel, was the least productive; the other two were about equal. Circumstances unnecessary to be mentioned, prevented the relative produce of those beds from being exactly ascertained, but the whole was a very good crop.

The soil of the other field is a sound loam. It had been for many years previous to 1816, in meadow and pasture, and was then in tolerably good heart. In that year it was ploughed, and manured liberally with the best stable dung, for potatoes, of which it produced an abundant crop. Last year it yielded a crop of wheat, luxuriant in straw, but deficient in grain. An acre of this field was manured this year for potatoes with the saline compost, in the proportion of forty barrels of lime and five pounds of salt to the barrel mixed with good mould, except two beds in the middle of it, which were manured with farm-yard dung of inferior quality at the rate of eighty cart loads to the acre. Besides this acre, half an acre contiguous to it, in the same field, was manured with soap-ashes and lime in compost with the same kind of mould, at the rate of 48 barrels of soap-ashes and 20 barrels of lime to the acre. The whole was planted with red-apple potatoes in beds, and cultivated with equal care.—During the growth of the crop, it was frequently visited by several gentlemen, who attended the course of Agricultural Lectures at the Cork Institution, at which they had been apprized of those experiments being in progress, and they all agreed in opinion, that the part manured with the compost of lime and salt appeared throughout the season decidedly superior to the rest, particularly to the dunged beds. As they had expressed a desire to see some of the potatoes differently manured dug out, it was accordingly done at their last visit, when about twenty of them attended, though the crop had not yet arrived at maturity. The beds were precisely four feet wide, with two feet alleys; and a portion twelve feet long of each of three beds, having different manure, were dug in their presence. The result was as follows: That extent of the dunged bed, produced twenty-six pounds of potatoes,—that manured with soap-ashes, thirty-three pounds,—and, that with lime and salt, thirty-seven pounds. As the quantity of ground in each portion, including the alleys, was eight square yards, and as the number of the square yards in an acre is four thousand eight hundred and forty, the following was the acreable produce respectively:—

	Wts.†		Tons.	cwt.	qrs.	lbs:
Of the dunged part, ...	749	......or......	7	0	1	22
Of the soap-ashes and lime,	950	......or......	8	18	1	1
Of the lime and salt, ...	1065	......or......	9	19	3	13

Some trials have been since made, in which the produce of all was much greater, and nearly in the above proportions.

This great superiority of the saline compost over dung, was far beyond our expectation; but it should be recollected, that the dung was not of a good quality. Should this manure be found, by subsequent trials in competition with a fair allowance of good farm-yard dung, to be of only equal efficacy, it will be sufficient to establish its claim to the attention of farmers.

By an attentive consideration of the result of the experiments in which the ratio of salt to lime, and the acreable quantity of both, were various, we have been led to think that forty barrels of lime slaked with a solution of six pounds of rock salt to each barrel, is the proper proportion for an acre of potatoes.—Perhaps it may be hereafter ascertained, that a greater allowance of salt would be better; but, with saline manures, it is safer to err on the side of too little than too much. An excess of salt, besides diminishing the amount, would we believe materially impair the quality of the crop. The tendency of soap-ashes, when liberally applied, has been invariably to render potatoes wet; and the same effect may be reasonably expected from an over dose of the salt in the composition of which we are treating; and it was with a view to counteract the probable bad effect of the salt on the quality of the potatoes, that we used so large a portion of lime. We have reason to think that a barrel of lime would decompose twelve pounds of salt; and, therefore, that twenty barrels of lime, slaked with a solution of two hundred and forty pounds of salt, would set free the quantity of soda, which we suppose to be enough for an acre.—If this opinion be just, there would be a material saving of expense, in the application of our compost, to every other species of crop than potatoes, as half the quantity of lime would be sufficient.

(To be continued.)

☞ Observations respecting an Agricultural Seminary have been received.

CURRENT PRICES IN DERRY.

Oatmeal,	...	11	0	*to*	12	0	*per cwt of* 120*lb.*
Oats,	...	0	8	..	0	10	*per stone.*
Barley,	...	0	9	..	0	10	
Potatoes,	...	0	2	..	0	3	
Beef,	...	0	3	..	0	5	*per pound.*
Mutton,	...	0	3	..	0	6	
Veal,	...	0	5	..	0	7	
Butter,	...	0	8	..	0	10	*per pound of* 18 *ozs.*
Old Flax,		36	0	..	45	0	*per cwt. undressed.*
New, (crop 1824,)		40	0	..	52	6	*per do. do.*
Five hank yarn		2	9	-	3	4	*per spangle.*
Four, do. do.		2	7	-	2	10	
Three, do. do.		2	8	-	2	11	
One, do. do.		2	6	-	2	8	

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton,
by whom Letter-press and Copperplate Printing and
Binding are neatly and expeditiously executed, on
reasonable terms.

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† Potatoes are sold in the Cork markets by the weight of twenty-one pounds. The apple potato is superior perhaps to all other varieties for the table, but is not a productive kind.

N. W. SOCIETY'S MAGAZINE.

Vol. II.—No. 46. Wednesday, 6th October, 1824. Price 2d.

To the Editor of the N. W. Society Magazine.

Sir—I have read your last publication from beginning to end, and shall observe upon it's contents from the end to the beginning. On the subject of ashes procured from either town or country, when our husbandmen have got them, I shall undertake to teach them to get rid of the rankness and abundance of weeds consequent on their use, if they will now set about to pull up the dockens so conspicuous in all the fields, and promise that they will not let the thistle give its seed to the winds in the ensuing year. But the Locomotive Machine! Compared to this of what importance are town or country ashes? Your quotation, from I know not what news, would persuade one that the days of Fortunatus had returned, that the Philosopher's stone had become as common as brick, and that all the dreams of Alchymy were realized. The miseries of Malthus, it appears, are removed for thousands of centuries, and men and women relieved from all inconvenient restraint. But the concluding paragraph of your extract damps my joy a little. These great things come to pass, because there are in the country one hundred millions of money, to be applied in any way which will produce 3½ per cent. Some of your contemporary Journals have lowered the value of masses of money in my eyes, and taught me at all events, that on this subject much may be said on both sides. I find one pronounce, that "we are "puffed up by the commercial system, till "our people have become miserable, till all is "grandeur, all is feebleness." Another says "that evil genias, all grasping commerce, "that owns neither home nor kindred, has "cast a shade upon the prospects of state; "that the steam engine and the spinning "jenny have first despoiled, and then scattered "abroad to vice and misery the once happy "peasant's family." Here are doubts of the advantage of hundreds of millions, if we had them. But they want not a Locomotive Machine to depart in a minute. Your *news* has told us they are on the look out for 3½ per cent. We know from all other news, that an increase of premium would attract our millions to the antipodes, *for they own neither home nor kindred.* Your next article, in my order, refers to an engine, superior to the Locomotive Machine, as mind [illegible] matter, to the means of encreasing the permanent power of the state many hundred fold—the education of its subjects. A committee of the N. W. Society having in view the establishment of an Agricultural Seminary, proposes two plans, one for the education of farmers only, the other for all orders. It has been my lot to mix much with my countrymen, and (if I were capable of it) to have the best opportunity of forming a judgment of the progress of mental improvement among them. I believe a gentleman of the present day differs little from a person of equal rank some time back. The course of study at our schools and colleges has varied little for some centuries. But among the lower orders, what a change has eventually taken place! What efforts have been made to raise them in the rank of human beings! I enclose you a stripe from the columns of a Dublin paper, which will I am sure prove interesting to your readers, and which I beg you to insert here.

DUBLIN MECHANICS' INSTITUTE.

To the Proprietor of the Freeman's Journal.

Sir—The want of useful knowledge must be considered as one of the principal, among the many, causes of the low state of society in Ireland. To raise a people to their proper rank in society, they must be intelligent as well as industrious; they must learn to apply their intellects as well as their bodies, to improve to the utmost the departments of manufactures, or of the arts, by which they are maintained. They must be instructed in the principles, as well as in the practice, of all the operations in which they take a part; nor is this alone sufficient, they must also be self-instructed. Knowledge, to be truly estimated and therefore properly applied, must not be doled out to them as an alms, it must be acquired by themselves as a duty.

Convinced of the truth and importance of these two principles, the working classes in

Glasgow, some time ago, formed themselves into a society for mutual improvement, in the branches of useful science most necessary for their circumstances. To this society they gave the modest and appropriate name of the *Mechanics' Institution.* Its avowed and only object was to form a fund for procuring courses of Lectures to be delivered to them on Mechanics, Chemistry, and other branches of science applicable to the useful arts; to make a collection of books on the same subjects, and for other subordinate purposes. The plan has succeeded to such a degree as not only to afford means of valuable (or, to speak more correctly, invaluable) instruction to all the working classes in Glasgow, but to excite a spirit that has given rise to similar institutions in London, and in most of the great commercial towns in great Britain, where they are now successfully carried on, on the same plan and principles as those of the parent society. The progress of these noble attempts of industry, to surmount the obstacles that have hitherto tended so powerfully to impede its progress towards its legitimate object—the attainment of wealth and happiness, has been well and fully detailed in the Mechanics' Magazine; and, as the object of this letter is not so much to enter into detail as to excite a corresponding sentiment here where it is so much more wanted, those who wish for more detailed information respecting them, are referred to that valuable manual of useful information.

Several individuals of the working classes in Dublin, have already determined to exert themselves, as far as in their power, to form a similar institution in this city, according to the following plan, to be modified hereafter as more enlarged experience may suggest.

1.—A Society to be formed under the name of the *Dublin Mechanics' Institute*, for the purpose of communicating to the subscribers practical instruction in the most useful departments of science.

2.—This Society is to be maintained by a subscription, to be paid by the members, at a rate not exceeding ten shillings in the year, payable monthly or quarterly, at the option of the individuals subscribing, and also two shillings and sixpence on admission.

3.—The fund so formed to be devoted to the procuring courses of Lectures on Mechanics, Chemistry, and other useful branches of science, by persons properly qualified, and in forming a collection of books on these subjects.

4.—The advice and co-operation of scientific and other individuals, desirous of promoting the object of this institution, to be respectfully solicited.

5.—The affairs of the institution to be managed by a committee chosen by the subscribers, (two thirds at least of such committee to be composed of operative men) with powers to be fixed at a general meeting.

6.—As soon as the preliminary arrangements shall have been formed, an invitation will be issued to all persons wishing to take part in this institution, to give in their names, previously to the calling of a general meeting for its permanent management.

As these arrangements are already in a state of forwardness, it is hoped that the general plan will very shortly be laid before the public, provided a sufficient number of the operative classes shall have come forward, when called upon, to enrol their names as members. A MECHANIC.

It would be an easy task to furnish you with similar stripes from other papers, more than your publication would contain; but I shall content myself with referring to an account of the school of the arts in Edinburgh, in the Scotch prints, and above all to a long article in the later Belfast newspapers, detailing the proceedings of a delegation of Scotch weavers in their town, at a public meeting.—To me these things prove, that it is comparatively uncalled for to make an exertion to educate the operative classes as they call themselves—they seem pretty much alive to their own interest, and to get on as rapidly as one could wish. Perhaps it may be right to consider how to keep the gentry in a state to be looked up to by the peasant population, as guides and as examples, to secure to them that share of influence, on which the public peace so much depends. The time has passed when ignorant opulence, could maintain or exact by force that truly valuable respect, which is naturally due and cheerfully paid to personal dignity. To be respected, men must be useful, and be considered so. Of this article then, as of that referring to the Locomotive Machine, the last paragragh is to me the least pleasing. I am grieved that the committee should express a doubt of the *Academy for the first class being filled up in the first instance.* Many years ago, persons of the first authority declared the system of education in our schools and colleges, for most of the purposes of human life, extremely defective; and every one must see that a man may be pre-eminent in a learned profession, and yet unfitted to promote the prosperity of his country in a general way. I speak not of those superior geniuses, who cannot be impeded in their course by professional tramfor the purposes of the Grand Jury taxation, unless a minute subdivision, namely, that of the separate townlands, were superadded to the boundaries of counties and of parishes.

Your Committee conceive, that the difficulty of tracing and of surveying these boundaries of townlands is not so considerable as might at first be apprehended.

They have learned with satisfaction from Major Colby, that "the additional time it would require would not be very considerable, provided the boundaries were set out." Mr. Griffith considers "that there would not be any great difficulty in ascertaining the boundary of the townlands." Mr. Bald is of the same opinion. Mr. Edgeworth states, that it would not have added materially to the expense of the survey of Roscommon, executed by him and Mr. Griffith, if he had laid down these subdivisions; and Mr. Aher, whose survey of Kilkenny actually includes the boundaries of townlands, has informed your Committee "that these boundaries are less difficult to trace than those of parishes."—Had the result of their investigation been different, and had the possible delays and difficulties connected with the representation of these subdivisions appeared greater than they really are, your Committee would not have felt themselves at liberty to abandon a principle essentially necessary for the success of the measure to which their attention has been directed.

It has given your Committee great satisfaction to think that the direction of the Survey can be undertaken by the Board of Ordnance; they cannot conceive any other authority so well calculated to ensure the scientific accuracy and unity of principle which ought to distinguish a great national work. The high character of the officer who conducts the Trigonometrical Survey of England, the advantages derivable from military organization, and the command of the best instruments, afford a sufficient security for the successful completion of the work. Your Committee feel a perfect confidence, that the Map, about to be furnished, will comprehend the local subdivisions, without which it would not answer the peculiar purposes of valuation.—Were the boundaries of townlands to be omitted, the counties would be obliged to supply the deficiency by independent efforts; and the experience of the past, with the state of too many of the existing local surveys, sufficiently prove, that it would be in vain to expect through the medium of the Grand Juries such separate maps as could be compared and combined for any useful national purpose; the expense of such double operation would also be considerably increased, and an inferior work would be produced at a sacrifice of time, convenience, and economy.

Your Committee fully agree in the opinion of Major Colby, that the steps should be taken without delay to facilitate the tracing of the townland boundaries, a measure which that officer conceives would reduce, by one half, the time required for this particular branch of the survey. With this view your Committee have already instructed their Chairman to bring in a Bill, which they trust may pass into a law during the present session, requiring the several Grand Juries to carry into effect the provisions of the 49th Geo. III., so far as respects the tables of Townlands and their acreable contents. They also conceive that every other aid and facility should be afforded to the officers of the Ordnance both by placing at their disposal an enlarged supply of improved instruments, and by giving them a free access to all the existing public maps and records which bear upon the subject. The *Down* Survey, that of the Forfeited Lands, the county and baronial maps, however imperfect in themselves, may be of some service. When the objects with which the intended Survey is undertaken are understood, your Committee are convinced that not only will all the local authorities in Ireland afford their zealous co-operation, but that many private individuals will, on public grounds, allow access to such maps and other documents as can be of service in tracing the boundaries.

In the Survey of Roscommon, the bishops and clergy afforded every facility in settling parochial boundaries; your Committee trust, that such aid will in the present instance be renewed, and assisted by the Magistrates and the police throughout Ireland. They are happy to learn, from the evidence, that so far from there being any reason to apprehend obstructions on the part of the peasantry, a reliance may be placed on their good will and co-operation. It is, however, important, that the nature and object of the proposed work should be thereby explained and understood; when that explanation is given, there can be no doubt but that the proprietors and occupiers of land in Ireland, will feel that the completion of the Survey and valuation is likely to conduce to the general good, and add to the value of property.

Whilst your Committee express their belief that the execution of the Survey cannot be placed in better hands than in those of the Ordnance officers, they cannot but add, that it is expedient to give much greater dispatch to this work, than what has occurred in the Trigonometrical Survey of England. That great work, highly creditable as it is to the individuals by whom it is conducted, has already been 33 years in progress, and yet it still wants one-third part of its completion. It ought to be added, however, that the operations of the Ordnance suffered interruption during the war. The Irish Survey is of the most urgent necessity, and no effort should be omitted to accelerate its completion. It may be observed, that the Ordnance Survey of Ireland must, in the course of a few years, have been undertaken by that department, and that by hastening the period of its execution for the important purposes of the Irish valuation, there will be ultimately no greater expense borne by the public. A limited number of persons employed, appears a questionable policy on the principles of economy, as the directing staff must be maintained no less for the control of a limited, than for the guidance of a more extended operation. It is satisfactory to your Committee to report, that the former Surveys carried on under Parliamentary authority, have established in Ireland a school of scientific topography. Whether it may be expedient that any of the respectable, civil engineers of Ireland should be employed, under the authority of the Ordnance, it is altogether for that Board, in its discretion, to determine; but your Committee perfectly agree with Major Colby, that a central and effectual control is indispensable to the successful termination of this undertaking. The best scale for effecting the intended Survey appears to your Committee that of six inches to the English mile; this will afford sufficient means to the engineers to enter into all the detailed information requisite; it is the scale on which the Ordnance Survey of Kent was originally commenced. With respect to the engraving, it may be advisable to follow the same scale adopted in the British maps. A protraction upon a double scale of twelve inches to the mile for cities and great towns, where the valuation must necessarily be more minute, has been recommended, and appears desirable. The altitudes of the principal mountains should also be given, as well as the boundary of the uninclosed lands, whether bog, mountain, or rock. The latter will correspond to the distinction traced on the Ordnance map, between cultivated lands, commons, and woods.

Your Committee have learned that the hydrographical charts, now extant, of the coast and harbours of Ireland, are inaccurate and unsatisfactory. Combined operations between the Admiralty and the Ordnance, for the purpose of furnishing information so import to the public interest, have already been su gested, and your Committee trust that t views of the Admiralty, contained in the Secretary's letter of the 22d day of April, may be carried into effect. The soundings of the harbour of Plymouth have been laid in with advantage, both with regard to economy and to dispatch, by making use of the points ascertained trigonometrically by the officers of the Ordnance.

Your Committee are of opinion, that the new Survey should supersede all local topographical proceedings, whether under the authority of Grand Juries, or otherwise. It is evident that the Ordnance Survey will supply all that can be required for county purposes. And however creditable to the artists who have executed them, are the maps, of Roscommon, Longford, Mayo, Kilkenny, and Dublin, yet most of the other county maps, being laid down upon a variety of scales with very imperfect instruments, and without pretension to scientific accuracy, it would be unwise to continue operations so liable to objection, as well as so expensive in their execution.

With a view to the diminution of expence, your Committee are inclined to think the Bavarian system is not an ineligible one, by which individual proprietors of estates are allowed to subscribe for copies of those parts of the map in which they feel interested. A Survey, on the scale of six inches to the mile, might be applied to various purposes of private utility, more especially when combined with a valuation, and with the statistical information included in the Population Returns. The latter documents contain the number of families, houses, the size and description of farms; and, when accompanied by an accurate map and valuation, your Committee are inclined to hope they may furnish individual proprietors, at a moderate price, whether inhabitants or absentees, with valuable information respecting the condition of their estates, and the best means of improving them.

2. With respect to the Valuation, your Committee are not as yet in possession of sufficient evidence, to enable them to form a detailed plan, or to do more than to suggest some leading general principles: they, however, regret this the less, because the survey must necessarily take precedence, the basis of the valuation being obviously the proposed maps of counties, baronies, and parishes, divided into their respective townlands. Tracings of these skeleton maps may be furnished, as the filling up of the triangulation proceeds. In effecting the valuation, your Committee conceive that three principles must be adhered to and combined. Section I. A fixed and uniform principle of valuation applicable throughout the whole work, and enabling the valuation not only of townlands, but that of counties, to be compared by one common measure. Section 2. A central authority, under the appointment of Government, for direction and superintendence, and for the generalization of the returns made in detail.—Section 3. Local assistance, regularly organized, furnishing information on the spot, and forming a check for the protection of private rights. In a future Session it will be the subject of consideration, how far these principles are accurate, and in what manner it will be the pleasure of Parliament to carry them into effect.

Your Committee are fully aware of the difficulty of the proposed valuation, and how much consideration it will require in all its details. During the recess, they trust that the attention of the Irish Government, of the Magistracy, of Grand Juries, and of the Proprietors of Land, may be given to the question, and that early in the next Session a Bill may be introduced, likely to meet the assent of the Legislature.

In concluding this Report, your Committee must again repeat their recommendations, that the work may be proceeded upon with as much dispatch as is consistent with accuracy of execution. It is not unworthy of remark, that all former Surveys of Ireland originated in forfeitures, and violent tranfers of property; the present has for its object the relief which can be afforded to the proprietors and occupiers of land from unequal taxation. The general tranquility of Europe enables the State to devote the abilities and exertions of a most valuable corps of officers to an undertaking, which, though not unimportant in a military point of view, recommends itself more directly as a civil measure. Your Committee trust that the Survey will be carried on with energy, as well as with skill, and that it will, when completed, be creditable to the nation, and to the scientific acquirements of the present age. In that portion of the empire to which it more particularly applies, it cannot but be received as a proof of the disposition of the Legislature to adopt all measures calculated to advance the interests of Ireland.

SALINE MANURE.

(Concluded from page 360.)

The following is the mode recommended to be adopted in preparing the Saline Manure:—

Let a platform of any kind of mould or earth, the richer the better, be formed, about six inches thick, twelve feet wide, and as long as may be necessary for the extent of land to be manured. At one end of this let the first load of lime, fresh from the kiln, be placed about four inches thick. Let the lime be then not only slaked, but moistened, with a solution of rock salt, or any common salt, in water, at the rate of 6 lb. of salt to each barrel of lime, pouring the solution, or pickle, gradually and evenly on the lime, as the latter is found to imbibe it, carefully avoiding to let any of the pickle escape from the lime, as it may thus fail to come within its influence and be thrown away. Then spread the lime thus moistened 2 or 3 inches thick on the platform, and cover it with 4 or 5 inches of mould. Let the second load of lime be placed on the platform near the first, and treated in the same manner. When the entire platform is thus covered, begin again with a second layer of lime; slake, moisten, spread and cover it, as the first, until it be also finished, and proceed in the same manner with a third and fourth layer. If the mould be not collected in one place, but deposited in a long row, as when the earth of a headland is used, one or two layers of lime and earth will be more convenient, and equally advantageous.—When the whole is covered with earth, let the heap be cut down and well mixed, in which state it may be suffered to lie until a short time before it is used, when it should be again turned. The proportion of water in which the salt is dissolved, depends on the state of the earth or mould. If the latter be wet, twenty gallons of water impregnated with 6lb. of salt, is sufficient for each barrel of lime; if it be dry, half a hogshead of water to that quantity of salt and lime will be necessary. Forty barrels of lime treated in this manner is a full dressing for an acre of potatoes.

The quantity of earth we have used was about eighty single horse cart loads to the acre; but if there be much difficulty in collecting it, from forty to fifty loads may be sufficient. The compost should be prepared at least two or three months before the time of using it, and if the expense be no material objection, one or two additional turnings in the interval would be desirable.

Of the efficacy of this manure for potatoes, we have already had satisfactory evidence; that it will be found of equal value in its operation on the subsequent crops, may be inferred from the durability of the effects of soap-ashes, to which in its most essential ingredients it is similar; and that it may be directly applied with advantage to other tillage crops we also anticipate, from the well-known effects of soap-ashes in such applications. To those farmers who are so situated, as to be debarred from all other adventitious manures, except lime, the advantage of being able to supply themselves abundantly with a cheap substitute, and, we trust, of superior value to any of them, is incalculable.

The following article has appeared in the Belfast News-Letter:—

A beautiful specimen of flax has been left for inspection at our office by a respectable inhabitant of Belfast, to whom it was transmitted from Edinburgh. This flax has been prepared and hackled according to a particular process invented by the gentleman who sent it to a friend, and who is anxious to benefit this province by improving the article which is the basis of our staple manufacture. Certainly we have not seen any Irish flax equal to this in beauty of texture, fineness, and other desirable and useful qualities.

Another paragraph informs us of several specimens of flax and flaxseed which had been left at their office for public inspection. They had been treated on the Dutch plan. Also a sample of yarn of 30 hanks to the pound, spun from flax prepared in this way, was in the possession of the Editor. The flax was raised by W. P. Ruxton, near Ardee, County of Louth. This gentleman has grown eight acres of flax, the entire of which has been submitted to the Dutch mode of treatment, with a view of shewing the plan to his tenants and neighbours; and a better crop has seldom been witnessed in any country.

It is important to observe, that in the Dutch mode of treating flax, each of the operations should be carefully attended to; for if as in many instances any one of them be neglected, the effect of the others will be defeated and the system unjustly condemned.

A CHALLENGE SWEESTAKES.

Sir James Galbraith challenges to show a Bull Calf, since April, against any member of the North West Society, for one Guinea to five Pounds—open to Tuesday, the 12th October, on notice to the Secretary.

CURRENT PRICES IN DERRY.

Oatmeal,	...	10	0	*to*	11	6	*per cwt of* 120*lb.*
Oats,	...	0	8	–	0	10	*per stone.*
Barley,	...	0	9	–	0	11	
Potatoes,	...	0	2	–	0	2½	
Beef,	...	0	3	–	0	5	*per pound.*
Mutton,	...	0	3	–	0	4	
Veal,	...	0	5	–	0	7	
Butter,	...	0	8	–	0	10	*per pound of* 18 *ozs.*
Flax undressed		45	0	–	0	56	
Five hank yarn		2	9	–	3	4	*per spangle.*
Four, do. do.		2	7	–	2	10	
Three, do. do.		2	8	–	2	11	
One, do. do.		2	6	–	2	8	

⁂ *Flax Premiums*, by the Linen Board, in our next: The Paper respecting an Agricultural Seminary by S. has not yet reached us.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

Vol. II.—No. 47. Wednesday, 13th October, 1824. Price 2d.

To the Editor of the N. W. Society Magazine.

Sir—The Report of the Select Committee of your Society, on the plan of an Agricultural Seminary, has been, with great propriety, made public, that it may be canvassed previous to the approaching General Meeting.—I shall therefore, I hope, be justified in considering it. It has been said of Irishmen, "that their patriotism is of the most ardent kind: but its object lies confused, and its progress must therefore be irregular or fruitless." Their education may be the cause. It points to something beyond the country of their birth, and the capital of the empire is the object to which ambition leads their thoughts. The lawyer and the divine look to the highest rows of their respective benches —the soldier and the sailor to Westminster Hall or Westminster Abbey. We educate persons with these views, I fancy, very well. The objects for which the N. W. Society became embodied are more confined, they are limited by narrow mears and boundaries, intended to induce all classes of people, within a certain district, heartily to co-operate in advancing the prosperity of the whole. This can be effected in no way with more certainty than by a well judged system of education. Heretofore many of our young gentlemen looked to the learned professions for advancement; these professions are greatly overstocked; and candidates for their honours and emoluments never were more numerous than at this time, when success is so much more than doubtful. To the army and navy access is difficult, and as to employments under government, never was there such a scramble for the humblest of them. Patronage has winged its way from Ireland. Trade requires more capital than can be easily procured, and agriculture presents itself as a profitable, independent, honourable employment for persons of competent skill. That skill your committee proposes to place within the reach of all. Among the causes, which Sir J. Sinclair, in his admirable account of Scottish husbandry, enumerates as contributing to its excellence, the third in order is, "that many of the proprietors of land in Scotland, who were distinguished by the acquisition of useful, rather than of showy accomplishments, took a delight in rural occupations; and in various districts now under a complete system of husbandry, they either improved their estates themselves, or encouraged their tenants to exertion, establishing for that purpose a most liberal system of connexion between the two classes." —The useful accomplishments of Sir J. Sinclair, I take to be those contemplated by the committee, and which are so admirably taught at Hofwyl, which, says Mr. Brougham, affords the best opportunity of education in Europe. It is, I understand, customary in England to send the sons of gentlemen as apprentices to farmers; and we have in our district one gentleman, who served such an apprenticeship, and whose farm affords an admirable study to agriculturists. To this gentleman I applied for an account of his expenditure, since he came to reside among us, and of the return which he has had. I here present it to your readers as a document of great interest and value.

Grange, 24th September, 1824.

Dear Sir—I here send you, according to promise, the extract from the accounts of farm labour done at Grange, during the two years from the 1st November, 1822, to the same date, 1824, calculating the unexpired time at an average rate. Feeling fully persuaded that if our northern brethren of the plough would expend more labour upon their farms than they usually do, they would discover fertility in the soil hitherto supposed sterile, and would reap an ample reward for their exertions. When I entered upon my farm November 1822, I found it in a state truly deplorable. It consists of 120 Cunningham acres, 60 of which were completely saturated with water, and about 15 that were exhausted bog, which had never been cultivated.

To amount paid rent of 120 acres at £1 10s. per acre	£180
To County cess of do.	15
To expense of draining	75
To expense of paring, burning and levelling 15 acres	45
To one thousand barrels of lime for compost	50
To expense of mire for do. &c. &c.	50
To wages of labour necessary to produce and save a crop	175
To seed of various kinds	40
To keep of 5 horses	100
To tear and wear of implements	25
To 18 gates and cost of repairing fences	60
To support of family	50
To incidental expenses	15
To interest of capital employed at 5 per cent	40
Total outlay from 1st Nov. 1822 to 1st Nov. 1823	920
Total produce of crop of the year 1822-23	520
Amount of outlay exceeding income	£400

Amount of outlay and income from the 1st November, 1823, to the same date 1824, calculating the unexpired time at an average rate:—

To amount paid rent of 120 acres at 30s. per acre	£180
To County cess for do.	20
To expense of draining	10
To do. for manure purchased	20
To labour for producing and saving crop	160
To seed of various kinds	55
To keep of 4 horses	80
To support of family	50
To incidental expenses	15
To interest of capital employed	25
Total outlay from 1st Nov. 1823 to 1st Nov. 1824	615
Total value of this year's crop at a moderate valuation	1000
Amount of income exceeding outlay	£385

Amount of outlay exceeding income in the year 1822-23	400
Amount of income exceeding outlay in the year 1823-24	385
Total amount due by farm account, Nov. 1824	£15

so that you will observe that the expenditure of 1822-23 has very nearly paid £120 per cent. and I am persuaded that there is a great tract of unimproved land that would reward the industrious husbandman in the same proportion. Your's, with much respect,

WM. HUTTON, jun.

Mr. Hutton studied agriculture in Norfolk —all that is known at Norfolk may be taught at Grocers' Hall. And is not this the useful knowledge alluded to by Sir John Sinclair? What could more contribute to the prosperity of our country, than to have many such residents as Mr. Hutton? Would it not be a good provision for many of our gentry to have Mr. Hutton's skill, a farm of 100 acres, and an adequate capital? And to our wealthiest land owners, how useful would it be to acquire the necessary knowledge to direct the improvement and embellishment of their estates. Mr. Locke tells us "that the great "men among the ancients, understood very "well how to reconcile manual labour with "affairs of state, and thought it no lessening "of their dignity to make the one the recreation of the other. That indeed which "seems most generally to have employed and "diverted their spare hours was agriculture. "Gideon among the Jews, was taken from "thrashing, as well as Cincinnatus among "the Romans, from the plough, to command "the armies of their countries against their "enemies, and it is plain their rural employments did not hinder their skill in arms, "nor make them less able in the arts of war "or government. They were great captains and statesmen as well as husbandmen. Cato Major, who had with great "reputation borne all the great offices of the "common-wealth, has left us an evidence "under his own hand, how much he was "versed in country affairs: and as I remember, "Cyrus thought gardening so little beneath "the dignity of a throne, that he shewed "Xenophon a large field of fruit trees of his "own planting. The records of antiquity "amongst Jews and Gentiles are full of instances of this kind, if it were necessary to "recommend useful recreations by example." Perhaps we may have two millions of Cunningham acres in the N. W. District. Let us fancy such an expenditure as Mr. Hutton's on one half of this, or eight millions of money, and the produce nearly doubled, where upon the earth would there be a people with less to wish for? For where is there a people more naturally contented? We have got over the alarm of excessive population, shall we now be terrified with the dread of excessive production? The market of England invites us to send to it five millions worth of territorial produce annually, and people employed as our's might be, would furnish the most profitable customers to the farmers.

I have honor to be,
Your obedient servant,
JAMES SINCLAIR.

To the Members of the N. W. Society.

An Article in the 31st vol. of the Edinburgh Review turned the attention of the public, to an Institution which had long been famous on the Continent, but was only then (1818) beginning to be noticed in this country. A statement extracted from various publications, and comprising the most important particulars on the subject was drawn up by the Reviewers, from which we propose to give some extracts.

M. Fellenberg (as we are informed,) is the head of a most respectable patrician family of the Canton of Berne, and possesses near the city an hereditary estate, sufficiently large for one of his station in that simple and frugal country; though trifling indeed, if compared either with the domains of nobles in wealthier states, or with the great things he has effected by the judicious disposition of it.—His income is said not to exceed £500 a year, were the property managed in the usual way. The land forms part of a beautiful plain surrounded by hills and interspersed with woods. The house and pleasure grounds are agreeably situated in the middle of the farms.—Being naturally of a retired and contemplative disposition, fond of study, and particularly attached to agricultural pursuits, he early in life devoted himself to the praiseworthy objects of improving his estate by his own industry, and of making this occupation subservient also to the improvement of the poor in his neighbourhood. It is above 26 years since he first formed his plan, which by its completion astonished all who visited Hofwyl. The distinguishing excellence of M. F's. operations consists in the practical details, comprising an infinite variety of ingenious methods for economising his resources, and gaining his end by sure means. The full detail of these means is not given, and it is made a question by the Reviewer whether any description could enable the reader who had not been on the spot, to form an adequate idea of the various processes.

The principal part of the establishment, and that which forms the ground-work of the whole, is a farm of about 230 acres, which M. F. has improved with great success, and continues to cultivate himself It is here that the poor children are employed to the number of between 30 and 40; and this may be said to be the branch to which all the others are more or less subordinate, and with which they have all connexion. Those other branches are an Academy for the sons of wealthier persons; an Agricultural Institute connected with a small experimental farm; and a manufactory of farming machinery and implements.

The Agricultural Institution consists of about 20 young men, who have constant access to the farm, as well as to the experimental farm of about nine acres, attached to this branch of the establishment. They are instructed in the book-learning of the subject, and of the arts and sciences immediately connected with it. They assist at daily conferences upon the new methods to be employed, the improvements of machinery—in short, every thing that usually occupies an agricultural society; with this great difference, that they are on the spot, where every position may be brought to the test of actual experiment, and are surrounded by practical agriculturists, makers of farming implements, and operations on various scales constantly going on.—These pupils pay about £70 a year for all expenses, and live at a Chateau about half-a-mile from the principal residence where M. F. and the boys are, and where the laboratory, cabinets of natural history, and apparatus of natural philosophy, are also fixed.

The manufactory of machinery and implements consists of two branches; one of common husbandry tools, as well as of those improved at Hofwyl; the other intended to carry on improvements in this essential article. The former furnishes a profit which defrays the expenses of the latter; for it not only supplies the farms, but leaves a surplus of machinery and tools for sale: it also instructs both the pupils of the Academy in the handicraft arts, the pupils of the institution in those connected with agriculture, and the poor boys in the trades of blacksmith and wheelwright, which may in after life afford them a livelihood. At the experimental manufactory great progress has been made. M. F. early remarked, that the important subject of improving agricultural machinery had never been pursued diligently and systematically: it was equally plain, that this could nowhere be accomplished with such advantages, as in the neighbourhood of great farming operations and experiments, which might naturally suggest constant hints to the manufacturer, and well as receive the greatest benefit from his assistance. This rational plan has been attended with deserved success. Many valuable improvements have been made in machinery. Among others, Mr. Brougham mentions with praise, a new horse-hoe and scarifier; and the Hofwyl drill-plough has received the commendations of the Board of Agriculture.

The most interesting branch (says our Reviewer) of this Establishment is that which provides for the Education of the poor. The principles upon which it is conducted are unquestionably sound;— for they are founded in a perfect knowledge of human nature.— That they will by some persons be thought chimerical is equally unquestionable; because their application to practice has been pushed a great deal farther than necessity prescribes, and because M. F. operating upon a small scale, has been able to do much more for the objects of his care and bounty than will ever be attempted in an extensive concern. Yet we will venture to assert, that the basis of his plan is perfectly practical; and that his success clearly demonstrates the possibility of carrying his principles into effect in any required degree. The children upon whom his trials have been made, were taken from the worst classes of society: all accounts agree in stating, *that they have been thoroughly reformed, and brought to an eminent degree of excellence in every respect,— while their labour has been all the while made a source of profit.*

We agree with the Reviewer that this is a most interesting branch of the Establishment and we also think it is full of encouragement, to the advocates of an Agricultural Seminary in the N. W. District. It is readily admitted that such talent, such perseverance, and above all such benevolence as Fellenberg has exhibited are not every day to be met with. But granting we should not find a superintendant of qualifications so very pre-eminent, we need not give up the point in despair. It no doubt would require instructors of uncommon endowments, to work the almost miraculous change which F. accomplished upon the once wretched beings subjected to his care.— It is not the poor outcasts of society, miserable vagrants, degraded by vice who are to become the pupils of the proposed seminary —it is the sons of a decent industrious people, a people prone to improvement, and possessing qualities which by due cultivation would place them on a level with the rural population *of the most favoured portion of Britain.*

If an individual of very moderate means produced so signal improvements in the very dregs of society, what may not a great public body effect, a body with all appurtenances and means to boot, and that too among a people, comparatively speaking, moral, intelligent and cultivated? And let it be remarked, that if in the methods of Fellenberg there were any great difficulty or mystery, a visit to his establishment, or to one on a similar footing perhaps nearer home would explain the whole matter. The Edinburgh Reviewer is of opinion that this is the only way to be master of the subject, yet if we might hazard an opinion, it will perhaps be found that the great success of Fellenberg, is owing not so much to any extraordinary ingenuity, as to his zeal, perseverance, good sense, and good temper. We proceed to give the language of the R. on this topic. We are not without hopes (says he) that our statesmen may call to the subject the attention of the public. But much remains to be learned after all that books can tell, of methods necessarily consisting in minute details. These can only be well understood, so as to be transferred and adopted here, by being studied daily upon the spot. For example the admirable system of economy which prevails, and enables M. F. to do so much with such limited means, resolves itself into an endless variety of expedients; each trifling when viewed separately—but all of which taken together constitute the method required. In like manner the plan pursued for reforming and training the poor children, consists of various processes and modes of treatment, which can only be learnt by actually seeing their operation. The pupils from Germany are sure to carry a practical knowledge of these matters into their own country, and if the system is only adopted in one instance, that knowledge will soon spread in proportion to its manifest usefulness. It is much to be wished that some of our countrymen, whose public spirit is proportioned to their means of serving the community, would devote a season or two to the important and not uninteresting business of visiting Hofwyl

According to Mr. Brougham's evidence they would be most cordially welcomed by M. F. who offered him every accommodation, when he intended to stay there a few weeks, for the purpose of studying the system minutely. A residence however of five or six months would be necessary thoroughly to understand all the details; and the sending two or three young persons to the Academy, would probably be the best means of importing a knowledge of all M. F's. improvements into this country. Such an experiment would at all events be safe as well as easy. If it led no practical results in favour of the poor, or of the agriculture of the nation, it would be attended with no risk, nor expense to the individuals. The boys would receive perhaps, one of the best educations that Europe affords, at a very moderate price; and the strictest regard would be paid both to their health and morals.—There is much difficulty however in obtaining admission for pupils; and Mr. B. mentions a journey undertaken while he was in Switzerland, by the present King and Queen of Wirtemberg, chiefly for the purpose of prevailing upon M. F. to take one more youth from Germany, a young person of the highest rank under his care. As German is the language spoken in the Establishment generally, any person resorting thither only for a few months, will do well previously to make himself master of that language.

The last branch of Mr. F's. Establishment which we have to describe is, the Academy for the sons of the rich; it consists of fifty or sixty pupils chiefly of patrician families: Mr. Brougham found there seven or eight German princes, besides several young nobles of that nation. These boys are taught every branch of elegant and useful learning, by the most eminent professors, to obtain whose assistance, neither pains nor expense is spared. There are said to be about twenty of them with salaries amounting to £2000 or £3000 a year. In teaching the sciences considerable aid is derived from the method of Pestalozzi, which consists in exercising the reasoning faculties more than is done by the ordinary ways of instruction, and making the process of learning much less a matter of rote. Music is taught both theoretically and practically.—Gymnastic exercises, including the use of arms. Carpentry and gardening, are added, rather as means of filling up the hours of relaxation; and among other useful objects, little if at all attended to elsewhere, care is taken to give by practice a just knowledge of bearings and distances, and every thing which is comprised in the phrase of *Coup-d'œil.* The professors are described as eminent men in their several lines of study; and their moral character, as well as manners, are most particularly attended to in the appointments—The harmony which reigns among them, and between master and pupil, are the best proofs that M. F. has succeeded in his selection.—The character, temper, and habits of the young people, are the paramount object of the superintendence exercised sedulously over them at every moment of time, but so as never to oppress or annoy. The methods of preserving this watchful attention, and at the same time leaving the pupil free from any sense of restraint, are among those processes which no description can adequately represent. The great principle seems to be, an appeal to the well known force of habit, and a judicious variation of the pursuits and studies, united with a never-failing gentleness, and serenity of temper in the instructor and guardian. Care is also taken to admit new pupils, only when all those upon the establishment are completely trained to the industrious and innocent pursuits of the place, so that this foundation being once laid, the labour of correcting the bad habits of new-comers is greatly abridged; they fall more easily into the manners of their companions. The following is the testimony borne by a very accurate and unprejudiced observer *(Pictet.)*

There are employed in the Institution none of the usual means of encouragement or of restraint, there is neither first nor lowest in place, nor premium, nor medals, nor debasing chastisements. A recapitulation made on Saturday evening, in presence of the pupils, by the professor, is the substitute for the ordinary motives of emulation and of fear. M. Fellenberg attends at it. In this sitting all the topics of blame or of praise for the week, are brought under review as respects each individual. The firm and kind tone of the professor, the fatherly affection which inspires his remonstrances, and his exhortations make a strong impression on the students. The children speak on their own behalf with freedom, they are heard with patience, and reproved with mildness. They yield not to authority, but to confiding affection, to the ascendancy of truth, to the opinion of their comrades, which is always correct.

An invariable regularity in the distribution of time, in all the details of life, renders all other methods of restraint or control unnecessary. Without ever feeling the strictness, they experience all the good effects of order, and acquire the taste and habit of regularity. They are confiding, open, gay, happy; for they feel that they are loved.—When they run into the follies incident to their age, they are generally the foremost to take blame to themselves, for a free confession, always kindly and indulgently received, delivers the youth from the torture of being on bad terms with himself and with his companions.

The little family has no *esprit de corps* but in favour of goodness. The pupils draw together when the object is to correct a fault, or to repair an injury; to justify the wrong, never. The disposition to second the teachers in the task of education, in place of forming leagues against them, arises from the conviction, that the father who adopted them, and his assistants have nothing so much at heart, as to make them good and happy.

Perhaps there is no institution in which it has been found possible to combine so much amusement with labour, so much liberty with regularity, and in which the pupils have more opportunities to prepare themselves for social intercourse, by the example of decorous and of polished manners. Besides the opportunity of visiting the first families in Berne, strangers in constant succession arrive from all countries, and it may be said that young men living at Hofwyl travel without leaving home.

The sum paid for this most excellent and complete course of education, rising from the elements of grammar to the highest branches of mathematical and physical science, is only £60 a year, which covers every expense except that of clothes.

It must not be supposed that the pupils of the two schools are on the footing of companions; nothing can be further from Mr. F.'s ideas than a fanciful equality, wholly inconsistent with a wholesome constitution of society. They have nothing in fact in common, but attendance at church on Sunday—that is those of the same communion. Constant pains, however, are taken to inculcate upon each, their relative duties to the other. The pupils of the academy, whatever be their rank or wealth, are sedulously taught, *that their first duty is to use the means which Providence has placed at their disposal, in a way beneficial to the less fortunate members of the community.* Indiscriminate charity, almsgiving, endowing hospitals, bestowing pensions, and other kinds of bounty so praiseworthy in their origin, and so hurtful in their tendency, Mr. F. by no means recommends. A charity founded on rational principles is alone patronized and exemplified at Hofwyl. The real good of the poor is consulted, and not their temporary relief; the task of maintaining them, or teaching them to obtain a maintenance by industry and frugality, is prescribed to the rich, and not the momentary gratification of compassionate feelings. This charity may truly be said to bless the giver as well as the receiver; it requires only his care and attention, without diminishing his resources; and the objects of it are rendered valuable to the community, happy in themselves, and grateful to benefactors, who have made them at once industrious and independent. Though the poor children live quite separate from the rich, they are daily seen by them; and the progress of their improvement and their labour is noted. The method of reclaiming and of training them is taught; and unquestionably few of Mr. F.'s wealthier pupils will be likely to leave his institution, without having imbibed a strong desire to carry its principles into operation in their own country.

We now proceed to give an account of the internal management of the schools, and first of the school of industry. The lessons are mostly given *viva voce*, and various questions continually interposed, respecting measures of capacity, length, and weight, and their fractional parts; the cubic contents of a piece of timber, or of a stack of hay; the time necessary to perform any particular task, under such or such circumstances; the effects of gravitation; the laws of mechanics; rules of grammar and different parts of speech,

&c. &c. The boys endeavour to find the solution of arithmetical and mathematical problems without writing, and at the same time to proceed with the mechanical processes in which they may happen to be engaged. Thus they require the *rationale* of the thing, and the most expeditious methods for practice; their understandings are awakened, and their attention kept alive. None of them are ever seen to look inattentive or tired although just returned from their day's labour in the fields. Contrivance and some degree of exertion appears to be a necessary condition of our enjoyments.

The prince whose game is driven to him in crowds and who fires at it with guns put ready-loaded into his hands, is incomparably sooner tired of his sport than he who beats the bushes all day for a shot.

The pupils in their turn sometimes put questions to their masters, and propose difficulties to be solved, which they do occasionally with much ingenuity. They draw outlines of maps from memory, exhibiting the principal towns, rivers, &c.—they draw correctly from nature, and in perspective, all sorts of machines for agriculture; and try chemically the different sorts of soil, of which they make well arranged tables.

The boys go through the military exercise once a week. Various gymnastic games are also occasionally practised; but mental exercises are more suitable after hard labour: they do indeed in the fields full as well as on the benches of the school. For instance, when employed in digging trenches, to irrigate a meadow, and while directing the water so as to regulate the fall, and distribute the moisture equally, they remind each other of what they have heard about the laws of hydraulics. When they clear a field of the stones turned up by the plough, and are directed to separate those which would produce lime, they know and practise the different tests by which their nature is ascertained, and can point out in the horizon the particular mountains which have furnished these various fragments.

Some of these acquirements may be thought unnecessary for country labourers; and they are so in some degree: but at all events they do no harm, provided they do not encroach on indispensable employments. The experiment had for its object, to shew how much may be done for the education of the poor, and their support, at least cost; and the more implies the less. If it should be found that some of the learning had better be spared for the sake of economy, it is a comfort to know that we have so much to come and go on.

We may be asked, where are masters like Verhli (M. F's assistant) to be found, able and willing to teach, and play, and labour—to guide the plough, and lead the musical band with equal zeal—and just wise enough to follow the directing spirit, without introducing any schemes of their own? We must answer, that it certainly will not be easy—and yet less difficult now than it was at first—since the pupils of Verhli may be expected to supply some individuals like himself; and these others. He is by no means a man of extraordinary talents, but simply a zealous, conscientious, and rational substitute or agent.

In order to encourage the attachment to property acquired by personal industry, the pupils are allowed certain emoluments, such as the proceeds of the seeds they collect, some part of their gleanings, and what they raise in a small garden of their own; all which accumulates and forms a fund for the time of their going away. No ambitious views are fostered by this mode of training the poorest class, beyond that of being good husbandmen. The pupils of the *school of industry* are not raised above their station; but their station dignified and improved is raised to them. The poor in the bitterness of want, may exclaim against taxes and ill government, and certainly not always without reason; but the worst government is their own of themselves. The most powerful remedies devised by benevolence, for the wretchedness arising from a crowded population are but temporary palliatives; and nothing will do after all, but individual prudence and practical morality.—Now this is precisely what is inculcated, and successfully inculcated in the School of industry.

Agricultural labour is not the only occupation which can be made the base of such an education. *Manufactures*, with all their disadvantages, might answer the purpose provided the children were not collected together in vast numbers in the same rooms, that they had intelligent, kind masters, and were allowed gardens and a number of hours daily to work in them; all of which must abridge the time for productive labour, or for learning. One great advantage of husbandry is, that it affords sufficient exercise, and leaves more time for mental improvement. Such of the pupils at Hofwyl, as have a turn for a trade, are allowed to become wheelwrights, carpenters, smiths, tailors, &c. These boys will leave the institution at the age of 21, understanding agriculture better than any peasants ever did before; besides having a useful trade, and a share of learning quite unprecedented among the same class of people; and yet as hard-working and abstemious as any of them, and with the best moral tastes & habits.

The following is the course of study for the sons of the rich:—Public education, M. F. observes, is too generally an uniform process, imposed indiscriminately, and by force, upon every variety of disposition, talents, and character His object on the other hand is to suit the education to the pupil, and not the pupil to the education. A good preceptor should be an experienced friend who guides, not a master who commands, and above all not an irascible master. He objects to rewards and to punishments: for fear makes slaves, and the love of distinction unfolds in the end, most of the bad passions. *Do as you would be done by* is, he maintains, the only safe rule to inculcate; a lively feeling of right and wrong, good will and kindness to all men, the only sentiments fit to be encouraged. Emulation, perhaps, is too powerful a stimulant to be altogether excluded; but it needs more frequently to be repressed than excited. Such a vigilant and cautious system of training would be best carried on certainly under the paternal roof, in a well regulated family; and therefore he wishes a school to resemble as nearly as possible such a family, and to be as unlike as possible to a mere manufactory of learning.

The whole course of studies may be considered as divided into three periods of three years each. In the first they study Greek and the Grecian History, the knowledge of animals, plants, and minerals. In the second Latin, Roman History, and the Geography of the Roman world. And in the third modern languages and literature, modern History to the last century, and Geography; the physical sciences and Chemistry. During the whole nine years they apply to mathematics, drawing, music, and gymnastics exercise.

The geometrical representation of near objects; the house, the garden, the course of the river, the surrounding country, the mountains beyond it, taken by approximation in the shape of a map, is the natural introduction to Geography. When the pupils feel a curiosity to know more of the world than they can see, maps are then laid before them, and the globe and its uses are explained.—They are made to delineate correctly from memory, the shape of continents and seas; and to place and name the principal chains of mountains, the course of rivers, the boundaries of states, their provinces and capitals; which leads to an enquiry into the particular history of each, and its natural productions.

The study of Mathematics continues during the period of education, to an extent determined entirely by the individual capacity and disposition of each pupil, who is not hurried or retarded for the sake of keeping pace with others. The interest and attention of those of ordinary abilities, is kept up by practical applications of the science; and none but those properly qualified apply to the pure mathematics: in doing so, they are carefully guarded against the pride of successful calculation, which is apt to overlook divine power in the consideration of its own.

While M. F. dwells with delight and confidence on the natural proofs of the existence of a Supreme Being, he admits fully, and establishes the necessity of a Revelation to supply the insufficiency of human reason. His pupils brought up in purity and simplicity of heart, under the influence of reason and kindness, are in a great degree christians, before they are taught christianity—and best prepared therefore to understand and receive the christain doctrine; but all dogmatic points are reserved for the ministers of their respective communions, who are to instruct them, and controversial disputes are unknown and interdicted.

The Reviewer goes on to state—Not satisfied with what we ourselves had learned and thought on this subject, we have been anxious to learn what was thought of it in the neighbourhood, and by persons not particularly friendly to the institution. We have scarcely heard an objection against *the school of industry*. The opinion is universally favourable to it, though there is more difference of sentiment as to the *highest school*; the worst we have heard is, that the pupils are not so advanced in any one science, as some young men brought up at other schools are. It is admitted that they are eminently moral and amiable in their deportment; that they are very intelligent; and that their ideas have a wide range. In short, that they are likely to become liberal minded gentlemen, not professors.

The obstructions which at first impeded the career of M. F. with respect to the N. W. Society will have no existence. A body comprehending so many characters so highly respectable for experience and elevated in rank, could easily give eclat to any seminary of the kind we have been describing, provided the object were founded in benevolence and conducted by wisdom. How far it may seem good to the Society to adopt the plan of F. whether in one branch or in all, it is their province to judge; if the above extracts awaken attention to the importance of the subject, or serve to throw any light upon it, it will afford much pleasure to the EDITOR.

Printed for the N. W. of Ireland Society by Moss. HEMPTON.

N. W. SOCIETY'S MAGAZINE.

VOL. II.—No. 48. WEDNESDAY, 20th OCTOBER, 1824. Price 2d.

☞ Such gentlemen as propose subscribing to the Agricultural Seminary about to be established, are requested to send their names and the number of Shares they will take, to the Secretary, without delay.

OCTOBER MEETING OF THE NORTH WEST SOCIETY.

The progress of the N. W. Society has hitherto been such as to meet the wishes of its most sanguine supporters. Like our native oak its roots spread on every side, and its branches shoot forth vigorously in all directions: may we not hope that its maturity will be as majestic as its youth has been flourishing, and that when centuries are gone by, it will continue to adorn and to shelter the land which gave it being? That the progress of the Institution may in the eyes of some appear slow, is very probable—but if it proceed with the regular and steady pace with which it has begun, in a very few years the remotest corners of the N. W. District will be subjected to its beneficial influence.

It was a most gratifying spectacle which was exhibited in the King's yard on Tuesday last. After a very severe December-like morning, the day cleared up, and soon after twelve o'clock, the live stock, of all descriptions, were placed in the stalls alloted for them. The pigs, sheep, and black cattle, were considered excellent in their respective kinds, and several animals of each species attracted general admiration.* The exhibition of horses was not, on the whole, considered so good as might be wished.

The concourse of spectators was very great, (upwards of 800 admitted into the yard;) of the multitude about one-eighth were the nobility and gentry of the district; the remainder was chiefly composed of well dressed respectable farmers, with their servants. The interest taken by the farmers in the matter must have been witnessed with delight by the leading members of the Society, since the very object of the trouble and expense to which they have gone, is to ameliorate the condition of the tenantry, by teaching them to employ their labour to the greatest advantage. Let this conviction be fully and generally felt, and *cups*, and *premiums*, and *shews*, and *ploughing matches*, will powerfully tend to stimulate all kinds of improvements. Let the hearts of the people be filled with a just confidence in the lords of the soil, and every effort to instruct and to amend them as farmers, or as members of society, will be accepted with respect and improved with gratitude.—Great as the impulse is, which is given to improvement by the half-yearly exhibitions, there is reason to believe that the benefits resulting from the local competitions among the members of the branch societies, are equally great. We had great pleasure in hearing a gentleman of high respectability and experience remark, that in a branch with which he is connected, (the Newtown-Limavady) the farmers, almost in every particular, excelled the gentry.

On Wednesday evening 112 noblemen and gentlemen (almost all members of the Society,) dined at the county inn. The utmost harmony and conviviality, enlivened by good cheer and by the juice of the grape, prevailed—and the burthen of the toasts, the topic of the speeches, the wish of all hearts was prosperity to the N. W. Society—success to its operations.

For the information of gentlemen who may be desirous of taking shares in the Agricultural Seminary about to be established, we insert the following

MINUTE OF THE PROCEEDINGS OF THE NORTH WEST SOCIETY.

Resolved—That a subscription, in shares of £25 each, be opened for establishing said Seminary, as follows:—

We, the undersigned, subscribe one, two, or more shares of £25 each, for the purpose of establishing a Seminary at Grocers' Hall, for general education, somewhat on the plan of the institution of M. Fellenberg, at Hofwyl; comprising instruction in the theory and *practice* of Agriculture, with Classics, Mathematics, Drawing, Surveying, Engineering, and other acquirements.

Resolved—That when 50 subscribers of

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* It is found impossible to have the list of prizes, &c. inserted in this number.

£25 each shall be completed, the Secretary shall summon a meeting to consult upon a plan for the establishment.

The following noblemen and gentlemen instantly subscribed:—

	Shares.		*Shares.*
Lord Aberdeen	4	Rev. F. Brownlow	1
Lord Caledon	4	A. Lyle	1
Lord Bishop of Derry	4	Thomas Scott	1
Lord Waterford	2	Rev. T. Richardson	1
Lord Bishop of Raphoe	2	Richard Hunter	1
Sir G. F. Hill, M. P.	2	William P. Kennedy	1
Sir Charles Style	2	Thomas Ramsay	1
Sir R. Ferguson	2	Cary M'Clelland	1
Sir Samuel Hayes	2	J. A. Smyth	1
Sir James Bruce	2	Andrew Ferguson	1
Sir Robert Bateson	2	William Marshall	1
Sir James Galbraith	2	Stewart Bruce	1
W. Stewart, Esq. M.P.	2	John Montgomery	1
G. R. Dawson, Esq. M.P.	2	Thomas Staples	1
Marcus M'Causland	2	Rev. Spencer Knox	1
Charles Warner	2	Conolly Gage	1
B. Beresford	2	George Young	1
H. Lyle	1	Ross Smyth	1
H. B. Hunter	1	John Rea	1
H. Lyle, Oaks,	1	Rev. John Young	1
W. L. Caningham	1	John Dysart	1
James Sinclair	1	Rev. George Hay	1
William Miller	1	John Fenton	1
Robert Bateson	1	John Johnston	1

Resolved—That Sir R. Ferguson, Bart. James Sinclair, Esq. John Fenton, Esq. W. Miller, Esq. and the Secretary, be a committee to take charge of the list of Subscribers to the Seminary, and endeavour to procure further subscriptions.

Advantages of Storing Turnips, &c.

It frequently happens that turnips are overtaken by frost, and congealed into a lump of ice. It is well known also that cattle, with no other food but frozen turnips, are in great danger of falling off in place of improving. They are too hard for their teeth, and when they hate swallowed a mouthful they discover great symptoms of uneasiness, raise their backs, draw in their feet, and fall a trembling as if seized with ague. The storing system affords complete security against those evils—it is certain however that the same advantage is attained, in many situations without storing, without any great foresight or management.

In the beginning of winter turnips are not affected by a slight degree of frost. Before it produce on them any sensible effect, the cold must be so intense as to form, on water, a pretty thick film of ice. The cause is plain—by the close of autumn, if the turnips have been properly set out by hand-hoeing, their leaves must form a close mantle over the whole field, which protects the bulbs till about Christmas. After that time the farmer must use the precaution of laying in during fresh weather, a quantity of turnips, that will supply his consumption for two or three weeks—our frosts seldom exceed that period. If they should continue longer, and if the stock of turnips is exhausted, it will be necessary to adopt a practice much in use in England, of raising them frozen as they are, and of thawing them in a running stream or in a pond. The turnips are raised with an instrument formed for the purpose, a fork with two prongs, slightly curved inwards, and set perpendicular to the handle. Towards evening they are carted from the field, and emptied into the pool. The common practice is to leave them under water till next morning: but two hours' steeping is sufficient. When taken out they are as fresh and sound as if they never had been frozen. This practice will be out of the question, however, in districts where the frosts set in early, and are severe and lasting. There the storing system is most advantageous, by rendering the farmer independent of the severities of the weather, and by securing for his cattle at all times sound and nutritive food.

We cannot do better in treating of the preservation of turnips, than submit to the public an Essay presented for the premium proposed by that eminent agriculturist, Sir George Mackenzie, Bart.

The introduction of turnips into the regular rotation of crops, is the most important agricultural improvement of modern times. Previous to that event, live stock were maintained during summer, on the herbage which nature spontaneously produced on land previously wrought out by a succession of white crops, and overrun with the accumulated weeds of ages; during winter on the straw and chaff of the preceding crop, with an occasional allowance of oats. Under that system no animal was fit for the shambles till the wane of summer; and as soon as the pasturage began to decline in autumn, the whole fattening stock was hurried indiscriminately to the market; and their half-fed carcases carefully salted and frugally consumed, satisfied the simple desires of our forefathers till the return of spring. The condition of the breeding stock on their winter fare, was truly deplorable. Vast numbers of cattle, in some seasons, were literally starved to death; and the survivors were so feeble at the approach of summer, as to require people to *lift* them, and support them to the nearest field which happened to be most *grass-proud*.

But since the introduction of turnips the grand *desideratum* in the former practice of husbandry has been supplied. From this improvement of their food, young stock continue their growth, and fat cattle are prepared for the market during every season of the year. Turnips succeed the decline of the grass, and afford succulent food till the return of summer. Thus farmers brave the rigour of the climate, and emulate by their industry the natural resources of happier climes, producing a perennial verdure on their fields.

Though turnips have been cultivated in Scotland for more than thirty years, yet storing is of much later origin. From the first introduction of that vegetable some intelligent farmers regularly carted off the field, and laid up under cover, a quantity of turnips sufficient for two or three weeks consumption. That practice affording provision against the contingency of frost, has extended itself to every district where the turnip husbandry is properly understood. But the plan of raising and storing the whole crop, immediately after harvest, seems to have been first used in Clydesdale—it has not however got into general practice.

There is a considerable latitude in the season of storing. In wet and clay soils, to avoid the inconveniences of winter poaching, the ground must be cleared of the turnips immediately after harvesting the potatoes; but in other soils they may be allowed with advantage, to remain on the ground some weeks later, as they continue to swell till overtaken by frost. The ordinary time is about the beginning of November. It is of considerable importance to raise them on a dry day, that as little earth as possible may adhere to them, and to secure them in the heap as they are raised, as even a slight degree of frost is found to be highly injurious. In case it should be necessary to raise them when the ground is moist, the following practical hint may be of advantage. Grasp the turnips by the leaves, give them a smart turn about half round, and then pull them upright from the ground.—During this operation the bulbs revolve on the tap-root as on an axis; the twist breaks the side roots, and rubs off the adhering earth. This method is surely preferable to the common way of raising a turnip clumsily in each hand, and of knocking them together till the earth fall off.

Experience has shewn the necessity of topping and tailing. The tap-root should be cut off close to the bulb. If the bulb itself be wounded, rottenness is then apt to ensue, and even should that not happen, a quantity of juice oozes out proportioned to the extent of the wound. The root is disliked by all animals as its acid quality occasions gripes and looseness. When any part of the leaves is left, turnips are liable to vegetate on receiving a slight degree of heat. In practice it is hard always to hit the point of excellence, the operators should take care to err on the safe side, to leave part of the leaves or root, rather than injure the bulb.

It has been found from experience that turnips to be safely preserved require a considerable exposure to the air. Hence the present common practice ot placing the depot in a well-aired situation, adjoining to the feeding byre, and of protecting it with nothing but a covering of straw. The store-heaps for conveniency are commonly placed in the barnyard. The turnips are laid down cart thick, in the form of a narrow tapering ridge; the breadth is about five feet, the height is about four, and the length is perfectly immaterial; the heap is covered with a thick thatch of straw, and this thatch is finally secured with ropes. Common turnips stored in this manner, are kept in good preservation till the middle of April. Some intelligent farmers have made, as it is said, improvements on this practice—they pay more attention to the dryness of the situation, than to its nearness to the feeding byre: in choosing a spot for the depot, bed the bottom well with straw, erect a three bar paling, or place sheep-flakes all around, inclining outwards, that the water-drop may be set off; raise the top of the heap as high as the turnips will lye, and thatch the whole with straw in the usual manner.—The depot is seven or eight feet in breadth at the base, and may be safely continued to any length required for holding the crop. In this way there is the additional advantage that less straw is required.

With regard to Swedish turnips, the same principles are applicable to them. From their superior hardness, they admit of considerable latitude in the season of storing, and in the dimensions of the heap. Under this treatment they are easily preserved uninjured for a great length of time.

Storing is not recommended as decidedly preferable in all cases. From my own observation, the loss by leaving on the ground appears to be much overrated. It is presumed that two-thirds of the crop are consumed during the three months of winter, without any material loss. The third which remains on the ground till spring, is the only part which suffers; consequently the annual loss, at an average is probably not one-third of one-third, or one-ninth of the crop.

A considerable loss is in general sustained by a storing. It is thought that turnips in a store-heap lose one-third of their weight before spring. Besides the turnips must be carried off the field soon after harvesting the potatoes, their further growth is prevented; whereas had they been left on the ground, they would certainly have increased in size, probably matured and improved their juices, till interrupted by the severity of winter.—But perhaps the strongest objection to the storing system is this, that turnips, however carefully stored, are less palatable to cattle, than when taken fresh from the ground.—That this inferiority was real, was proved by an experiment made in presence of the Eddlestone Farmer's Club. They produced two turnips, the one from a sound store-heap, and the other fresh from the field. Several cows were turned out successively to prove them, and all after smelling at both, began to eat the turnip from the field till it was finished, the other not being touched. This inferiority cannot be referred to a diminution of succulence, (for it was discovered by the sense of smelling) but to a bad flavour, arising probably from the operations of topping and tailing. The juices escaping from the wounded parts form a putrid crust, which must be eaten through by the cattle before they arrive at the sound interior. Of the nature of this injury, some conception may be formed by those persons, who, from the carelessness of their cook, have accidently tasted a potato that had been wounded in the digging.

From these observations it may be concluded that in general the severities of the weather occasion less loss, than the practice of storing. In favour of the latter, however, there is this great advantage, that the loss is always uniform, and can be foreseen and provided for, while in the former method, the loss is perfectly uncertain. This circumstance is often very embarrassing to farmers in exposed situations. In some favourable years, the whole crop may escape unhurt.—On the contrary if the weather be severe, almost all the turnips intended for spring food, are destroyed, and the farmer will sustain much loss, in disposing of his cattle before they are fully fattened. It may therefore be imagined, that in exposed situations, the practice of storing is advisable to a certain extent, say one-third of the crop, that there may be always a certain supply for spring; but a practice has been introduced, which promises to render even that extent of storing unnecessary, of earthing up the turnips in the drills, with a double mould-board plough at the end of autumn.

In spring frosts the earthing up shields the turnips from the hot rays of the sun, which are very injurious to them when succeeded by intense cold. But earthing up is also attended with inconvenience. If the frost be severe it becomes laborious to raise them with the pick-axe; if the ground be wet it is difficult to free them from the adhering earth. It seems necessary therefore to get rid of the storing system, that a kind of the turnip were discovered hardy enough to resist the inclemency of our winter, and every vicissitude of our variable weather. In the sequel some reasons will be produced to show that this discovery is now made.

CURE FOR CONTAGIOUS GLANDERS.

Mr. Sewel, Assistant Professor of the Veterinary College, Camden Town, well known for his happy discovery of a mode of curing, in many cases, and alleviating in all, that hitherto irremediable disease, the foundered feet of horses, by means of excision of the nerve, has been equally fortunate in another hitherto incurable disease, the contagious glanders. For this formidable malady, he has found a remedy in the use of sulphate of copper, (blue vitriol) given in the form of bolus or ball, daily for several weeks. The dose was from one to two ounces of sulphate of copper.—*Tilloch's Philosophical Magazine.*

(From the Irish Farmer's Journal)

SIR—A correspondent in your last number has given his opinions respecting the prevention of disease in potatoes, and has also recommended agriculturists to try the renewing of this useful vegetable by seed, a subject certainly worthy of the most minute attention, as well from the advantages which the country would derive from the adoption of his plan, in respect to improving the quality of the potato, as to effecting a considerable saving, by retaining at home the vast sums which are annually sent from this country for the purchase of foreign seed-cuts. I deem it my duty to offer my humble testimony in favour of his recommendation, as, although I never tried the experiment on a very extended scale, yet I have found it to succeed remarkably well for three successive seasons, having now a bed of seedling potatoes of most luxuriant and promising appearance, and two ridges, each of about 14 perches in length, and five feet in width—one of potatoes the second year from the seed, and the other the third, several of the roots of which I have raised, and find them to produce abundantly, particularly the last mentioned, which I consider as likely to come to full perfection this year, and to afford the means of planting a large portion of ground for many years with the white and red apple potato, besides having some other varieties highly worthy of being brought into cultivation. Those were originally grown from seed entirely saved from the apple kind—the others in the second year's course were from pink-eyes, and shew hardly any variation from the primal stock; and I am informed by a gentleman who has frequently tried them, that they seldom do—which circumstance may prove a strong inducement to farmers who prefer them, or whose soils are more congenial to them, no longer to depend on Scotland for a yearly supply, but to raise them (which they may easily do by your correspondent's directions) at home. All those potatoes, in their different stages of advancement, are perfectly free from curl, or any other disease whatever, as indeed is allowed by all the eminent writers on agriculture, who have treated of the potato, to be invariably the case for several years after they are first reared from seed—and it is also a well-established fact, they vegetate more speedily, and therefore, *cæteris paribus*, will make a better growth in the season than the sets from old and enervated roots, whilst to prove the fallacy of endeavouring successfully to free such roots from the disease of curl, or their natural tendency to deteriorate in produce, I may mention that some years ago the Agricultural Society of Manchester proposed a premium to him who should discover the cause and cure of curl—this produced no less than 13 communications, not one of which had the desired effect; but from the entire of them could only be collected, a few vague surmises and empty theories, ultimately producing no other conviction than that the task was hopeless.

I think I am warranted in asserting that the potato crop often fails in the inland counties of Ireland, from the difficulty of procuring fresh seed-cuts, owing to which the farmer is necessitated to plant the old worn-out potatoes which have been in cultivation there for years, while such a calamity seldom occurs near the sea-coast, where the Cumberland Bangors, Yorkshire apples, and Scotch pink-eyes can be obtained. How profitable, then, must it be to the farmers in those districts to get into the habit of raising potatoes suited to their own soil, without being under the apprehension of having their supply for planting either inconveniently distant, or, as frequently happens, injured by sea water!

It is rather extraordinary that the potato, a vegetable on which so great a part of our population almost wholly subsist, should never have so far attracted the notice of that useful body, the Farming Society, as to induce premiums to be offered for improvements in its cultivation, or for the introduction of new and approved varieties; for certainly to Ireland it is the most important production which her agriculture affords, though, while cattle of all descriptions and corn crops are attended to with the greatest care, it is treated with silent but unmerited contempt; and no time could be more opportune for giving it encouragement than the present, as the recent distressing famines in the south and west of this kingdom, evidently were occasioned by its failure. As an additional reason why the cultivation of potatoes is worthy of being an object of peculiar interest to an agricultural society in this country, I may mention that they are the crop of all others most suited to the reclaiming of peat lands, to which public attention is at present particularly directed.

Mr. Marshall, in his "Rural Economy of Yorkshire," says, that "there is great reason to believe that the disease which has of late years been fatal to the potato crop in this and other districts, under the name of curled tops, has arisen from too long a continuance of declining varieties. Be this as it may, it appears that fresh varieties raised from seed are not liable to that disease." The expression fresh varieties might lead many to suppose that only new sorts of potatoes were to be considered of a healthy nature; but I have never seen an instance of curl among potatoes which were even of the exact description of the parent stock, and which, according to him, might be considered as more likely to inherit its defects. I wish also to allude to a "Treatise on the culture of Potatoes," lately published, by an anonymous author, who states in it, that seed may be saved from the Bangor plants by carefully removing the earth from about their roots, and nipping off the bulbs in the earliest stage of their formation, which is generally most practicable when the plants begin to show the blossom buds.—This plan I tried with every possible care, and could not succeed in it; and on that account I would prefer searching the ridges at the latter end of the season, when some stalks may be found which have generally but one bulb under each, the eyes of which are at one end. Such stalks perfect the topapple, but the root is degenerate and useless to apply for the purpose of propagation. The country people denominate them bastard Bangors. Some seed saved of this species I sowed in the last spring, and I anticipate the best results from the present appearance of the plants. In conclusion, Sir, I beg leave to mention, that as I have formerly sent you some specimens of mangel worzel, and other agricultural productions, for the inspection of any of your friends interested in farming pursuits, so I expect, in the course of a few weeks, to send you a few samples of potatoes raised from seed, which, I trust, will be considered equal to any which Great Britian can afford.

I am, Sir, your's most truly,

F. T. P.

[From the Scotch Farmer's Magazine.]

On extirpating Whins and Broom.

Sir—Even small matters are not below the notice of attentive agriculturists; and though the subjects I now write upon, seedling plants of whins, or furze, and broom, be in themselves small, their consequences are far from unimportant. "A stick in time, saves nine," says an old Scots proverb; therefore, I hope the trifling attention recommended in the following slight communication, may be found really to serve the husbandman very materially. The practice which it is meant to exemplify and recommend to others, originated with me from another old proverbial saying,

"How broom, hae broom;
Pow broom, nae broom."

A few years ago, I improved, by turnip fallow, lime, and dung, a dry field on my farm, much overrun with the above shrubs. Immediately after the turnips, eaten by sheep on the ground, the field was sown up in grass with the barley crop, and succeeded to a wish. Numberless seedlings of whin and broom, however, made their appearance in the stubble; many of which I pulled up during harvest. As my intention was, to restore fertility to a piece of land that had been long ruinously over-cropt, I pastured with sheep the first year; and soon perceived the grass to be infested with vast quantities of whin and broom plants. As my small flock of ewes and lambs were pastured in that field, it became my daily resort; and almost every day, I amused myself, more especially after rain, with pulling up the young plants. This happened last year, 1802; and, being tolerably diligent, I was so fortunate as not to leave, as far as I know, one plant behind; for in all my walks this year, 1803, in the same field, and used for the same purpose, I have never been able to find a single plant. The grass continuing excellent, I mean to pasture a third year; and afterwards to throw it into the general rotation of my farm. I certainly do not expect, next time it is thrown into grass, to find this field free from whins and broom; but I surely expect to find the numbers of these plants much diminished; at least, I have prevented, with certainty, any additional seeds being communicated to the soil.

I happen to be in a proverbial humour, and beg leave to recommend, to the attention of my brother farmers, an old saw :

"Once seeding causes seven years weeding."

This is a text upon which many excellent agricultural sermons might be composed ; and, for one of these, the subject of this apparently unimportant communication is no bad illustration.

From my own personal experience, in the field of which I now write, I am perfectly satisfied that a child of ten years old is capable, in a very few days, after a good soaking rain, to pull up as many seedling plants as usually grow upon twenty acres of land.—After the land is brought into that state of fertility as to undergo a regular rotation, along with the rest of a tillage farm, this practice may not be so necessary ; as tillage, especially the fallow break, will undoubtedly kill these seedlings, before they can run up to seed. But I will now venture to lay down the foulest whinny or broomy knoll in Britain, into permanent grass ; and free it, with certainty, from whins and broom, in two or three years, for half a crown the ten acres.

R. T.

ON CURL IN POTATOES.

(By Thomas A. Knight, Esq. F. R. S. &c.)

I shall conclude my present communication with some remarks upon the origin and cure of a disease, the CURL, which a few years ago destroyed many of our best varieties of potatoes ; and to the attacks of which every good variety of the potato will probably be subject. I observed that the leaves of several kinds of potatoes which were dry and farinaceous, that I cultivated, produced curled leaves, whilst those of other kinds, which were soft and aqueous, were perfectly well formed ; whence I was led to suspect, that the disease originated in the preternaturally inspissated state of the sap in the dry and farinaceous varieties. I conceived that the sap, if not sufficiently fluid, might stagnate in and close the fine vessels of the leaf, during its growth and extension, and thus occasion the irregular contractions which constitute this disease, and this conclusion which I drew many years ago, is perfectly consistent with the opinions I subquently entertained respecting the formation of leaves.—*London Horticultural Transactions, vol. 1. page* 190.

GENERAL OBSERVATIONS *on the* PRACTICE *and* PRINCIPLES *of* IRRIGATION.

(By the Rev. William Singers.)

On the choice of water for Meadows.

The quality of the water may be ascertained by experiment. Let a small portion of land be floated with it for a month, about the latter end of harvest ; and afterwards for a week or two, about the end of spring.—The effects of this easy experiment will appear on the grass ; either in respect of quantity, or quality, or both : and the warmth of the water may be sufficiently discovered, by its power of resisting early frosts, a matter of importance in irrigation.

The appearance of the water is not sufficient to determine its qualities. Thick muddy rivers, enriched in their passage through towns, and fertile soils, are not so frequently to be met with as the friends of irrigation would wish. When these can be obtained, the operator may depend on their efficacy.—But clear alpine streams differ essentially in their qualities ; and these are safest and most certainly ascertained, by observing the effect of the water and the periods of its freezing, as recommended above. With regard to those waters which are known to flow through beds of marle, there is reason to believe, that much advantage may be obtained from the use of them, in a sweet and rich verdure, valuable for pasturage. Warm rivulets, containing great quantities of spring water, and resisting early frosts, may be expected to encourage an early pasturage, and probably also, tolerable crops of hay. But mossy waters, darkened by the tincture of peat bogs, are very unpromising for the purposes of irrigation ; though it is proper to give them a trial ; and if mixed with marle waters, or conducted upon soils abounding with calcareous matters, they may be productive of benefit.

On the choice of Lands for watering.

It is of importance, in many dry pastures, to water lands covered with fog (moss,) or with broom, heath or other plants of less value to the farmer, for the purpose of extirpating these plants, and encouraging palatable grasses. On store farms which have no tendency to produce the rot, this practice may prove useful ; but when there is any degree of risk from this distemper, the farmer will be cautious, and suffer no summer watering.

A flat meadow can only be watered in ridges, and requires a man of skill to lay it out in proper form, and the work is accomplished at a considerable expense. A slope may generally be watered in catch-work, at much less expense, and with much less water. It is an error to prefer the flat grounds to the gentle slopes, for water meadows, unless there be ample command of water, and skill and money, to go through the necessary operations. The most rational method of improving flat grounds, is generally by draining, and then giving them a top dressing. Yet if they can be formed into ridges by the plough, they may be converted into meadows at much less expense than is necessary, if they should require levelling with the spade. This distinction may be kept in view.

A gentle declivity, which can be watered in catch-work, is an inviting subject. It perhaps produces little in the state of nature, but it may become very productive by the application of water.

It will readily occur to the reader, that streams of equal quality may differ materially, in respect of the facility and safety with which they can be managed, and conducted to the grounds which are intended to be floated: that whatever stream is fixed on for this purpose the operator should determine by means of a level, what lands are capable of being watered from it: that it is always convenient, and generally necessary, to inclose the meadows with proper fences: and that a man of prudence will have an eye to the quantity of water, the demands of his farm, the chance of markets for any surplus he may have to spare, and the prospect of obtaining sufficient assistance in making his crops of hay with ease and expedition.

(To be continued.)

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

VALUABLE COMMUNICATION
From the COUNTESS *of* CALEDON,
On the Manufacture of Stilton Cheese.

The members of the N. W. Society had an opportunity of tasting an admirable specimen of *Stilton Cheese*, made under the direction of the Countess of Caledon, and transmitted by her Ladyship. Our readers will agree with us as to the importance of the communication, not more from its intrinsic value, than as a most pleasing testimony of the friendship of that distinguished personage for this country. We are convinced that the best method by which our good housewives can shew their gratitude, will be to accept the instruction thus given them; and we indulge the hope, that many specimens of Irish Stilton may be brought forward at the April Meeting.

"Two gallons of cream from the preceding night's milk to be put to twelve gallons of new milk, warm from the cow, and a tea cup full of rennet. To stand till all the whey has run out, and to be cut across that it may drain the better, taking care to break the curd as little as possible, especially when put into the mould, which should have a cloth in it. When the mould is half full of curd, put in a handful of salt, then fill up the rest of the mould with curd as high as you can pile it, and cover the top with the cloth that surrounds the curd in the mould. Put on a circular piece of board at the top of the curd, and set it in the press. If there is curd left, you may take the cheese out of the press in an hour or two and turn it, and add the curd at the bottom. Press it, and turn it again with a dry cloth in the mould towards evening. Sprinkle salt on the cloth, to prevent its sticking to the cheese. Let it remain in the press all night, and turn it again next morning, putting on a dry cloth. It may be pressed again, if it appears to want it. When sufficiently pressed, it is to have a cloth or binder pinned very tight round it; which should be changed every day till the cheese is quite dry. Before the last pressing, it is common to run a skewer two or three times thro' the cheese, to let out any whey that might remain in. The above quantity of milk and cream makes a large cheese about 16lb. weight; but ten gallons of new milk and a gallon and a-half of cream make a good sized cheese.

"A good cheese, though not so rich as the former, may be made by omitting the cream, and adding more new milk; but, of course, the cheese is not so rich as by the foregoing receipt."

WANTED, 2 or 3 Persons who perfectly understand the Scutching of Flax and Superintending a Flax Mill. Apply to Mr. MARSHALL, *Derry.*

Printed for the N. W. of Ireland Society by Moss. Hempton, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. II.—No. 49. WEDNESDAY, 27th OCTOBER, 1824. Price 2d.

NORTH WEST SOCIETY.

GENERAL PROCEEDINGS.

At a General Meeting of the North West of Ireland Society, at Londonderry, on the 12th, 13th, 14th, and 15th of October, 1824,

Sir James Bruce, Bart. Vice-President, in the Chair.
Present—146 Members.

The Secretary reported that the following had been admitted ordinary Members of the Society since the last Meeting in April:—

The Rt. Hon. the Lord Bishop of Meath.
The Lord Bishop of Raphoe.
Lord George Beresford.
The Worshipful the Mercers' Company of London.
Sir William Williams, K. C. B.
Col. Madden, of Hilton.
James Johnston, of Knappa, Esq.
Geo. Macartney, of Lisanore Castle, Esq.
John Montgomery, of Benvarden, Esq.
George Grierson, of [illegible], Esq.
James Magill, of Fairview, Esq.
Rev. Richard Hamilton.
Rev. T. P. Magee.
Rev. William Moore, of Londonderry.
Mr. Fyffe, of Baronscourt.
John Quin, of Campsey, Esq.

The Society unanimously elected Sir Geo. Cailey, Bart. an honorary member.

The Society proceeded to the election of a President, Vice-Presidents, Committee of Correspondence, and General Committee in room of those who retire, as required by the fourth and sixth articles of the regulations.

Resolved unanimously—That the Earl of Wicklow be elected President for the county of Donegal, vice the Marquis of Conyngham. That Marcus M'Causland, Esq. for the county of Derry—Rev. E. Bowen for the county of Donegal—J. Sinclair, Esq. for the county of Tyrone—be Vice-Presidents in room of those who retire.

Committee of Correspondence—Sir Robt. Ferguson, Bart. John Fenton and William Miller, Esqrs.

That Sir James Bruce, Bart. Rev. T. Richardson, and Charles Warner, Esq for the county of Derry—Sir Charles Style, Bart. Col. Knox, Andrew Ferguson, Esq. for the county of Donegal—Rev. F. Brownlow, W. L. Conyngham, Samuel Wright, Esqrs. for the county of Tyrone, be Members of the General Committee in room of those who retire.

The Society having taken into consideration the Report of the Coumitee respecting Branch Societies,

Resolved—That the Parishes of Upper and Lower Moville, Cloncah, Culdaff, and Donagh, be formed into a Branch Society, to be called the North Innishowen Branch.

Report of the Treasurer's Account.

Your Committee having examined the Treasurer's Account, it appears that the balance in hands amounts to	£886	5	0
Subscriptions now payable by the Parent Society	717	12	0
Subscriptions paid in on account of sixteen Branch Societies	379	0	0
	£1982	17	0

ENGAGEMENTS.

General Premiums, now payable	£167			
Branch Societies Premiums, now payable	355			
Editorship of the Magazine, 2 years	110			
To defray the expense of the Charter, formerly voted	150			
Printer's Account	15			
Advertising	14			
Miscellaneous	30	841	0	0
Balance applicable towards the grants of this year from the Parent Society		£1141	17	0

Resolved unanimously—that a gold Medal with a suitable inscription, be presented to William Miller, Esq. not only as a tribute of approbation for the zeal and activity he has evinced in the discharge of his duties as a Member of the Corresponding Committee, but also as a mark of the sense the Society entertains of the deep interest he has taken, and the ready and effective aid and assistance he has afforded, in the accomplishment of every measure calculated to conduce to the prosperity and success of the Society.

Statistical Reports.

The Society having taken into consideration the different Statistical Reports which they have received, in consequence of the several premiums offered by them, Resolved—That it appears to this meeting that a Statistical Survey of the North West District of Ulster would be a work of great public utility, and as such, deserving the attention of this Society; and for the purpose of carrying the same into effect, that the following gentlemen be appointed a Committee—James Sinclair, Marcus M'Causland, Con. Gage, John Boyd, Esqrs. and Rev. J. Graham—and that the sum of £100 be placed at their disposal.

Resolved—That the following gentlemen be appointed a Committee to examine the donation and subscription list of the members, as also the claims of, and grants made to, the different Branch Societies, and to report to this meeting what proportion the subscriptions of the different members of the parent Society, resident within the different Branches, bear to the demands made by each Branch on the funds of this Society, viz.—

A. Ferguson, Esq. Rev R. Babington, C. M'Clellan, Esq.

The Meeting having taken into consideration, whether it might be more advisable to allow the members who do not reside within the district, to compete for the general premiums of the Society, or to form premiums for such non-resident members—

Resolved—That the subscription of all members, elected from counties not included in the district of this Society, shall be exclusively appropriated to premiums for members not resident within the district, with the addition of such advantage as is usually allowed to Branch Societies, or as it may appear most advisable for improving the different breeds of cattle.

The Society proceeded to take into consideration the Report of the Committee on the subject of the proposed Agricultural Seminary, and the said Report having been read, as also the following letters from Mr. Warner, agent to the Worshipful the Grocers' Company of London, on the subject of the proposed establishment, suggesting the house and demesne of Grocers' Hall, in the county of Derry, as a place suited for such purpose—

Derry 4th July, 1824.

Dear Sir,

Had I been aware you would have been so long absent, I would have written to inform you, that the Grocers' Company are willing to meet the N. W. Society, on the subject of appropriating Mr. Babington's late house and farm for an Experimental Farm and Agricultural Seminary. I understand there is to be a meeting on the 13th, and I think it would be right to acquaint the members generally by circular, of the intentions of the Company, in order that some plan may be prepared against the General Meeting in October. I am, dear Sir, your's most truly,

CHARLES WARNER.

William Marshall, Esq.

Derry, 19th July, 1824.

Dear Sir,

I wrote you to Waterford, acknowledging the receipt of your's on the subject of establishing an Agricultural Seminary and Experimental Farm at Grocers' Hall, and requesting further information as to the extent of ground, terms, tenure, &c. which the Company would be disposed to give.

We have since had a Meeting of the Committee, before whom I laid your letter; the subject was fully discussed, and the opinion was, that if undertaken, it should be on an extended scale, and in some degree similar to that of Mr Fellenberg, at Hofwyl, having two establishments—one for the sons of noblemen and gentlemen, the other for the farming class—the former not to be by any means as extensive as the latter.

The Committee came to the following resolution, viz—"That Mr Sinclair, Mr Miller, Mr Fenton, and Mr Marshall examine the situation proposed by Mr Warner for establishing an Agricultural Seminary, and that they do communicate with him on the subject as to the terms, tenure, and extent of ground to be procured; and further, that they do prepare a prospectus of the proposed establishment to be submitted to the Committee, to be called specially for that purpose."

We have been to Grocers' Hall, and examined the situation, &c. &c. which we much approve of, and are now ready to meet you on the subject. As I presume your terms will be liberal, I cannot see any difficulty in carrying this most desirable object into effect. I remain, dear Sir, your obedient servant,

W. MARSHALL.

Charles Warner, Esq.

Eye, near Peterboro,' 26th July, 1824.

Dear Sir,

I duly received your letters of the 19th instant, to London and to this place, and I am glad to find that the subject of the Agricultural School has been so soon brought before the Committee of the North West Society. It is not in my power at present to enter into any details on the subject, which has not yet been before the Grocers' Company, further than my original suggestions of the plan, which they were pleased to approve—neither is it possible to bring it before them at present, as there will be no Committee until October. I, therefore, beg to suggest, that it would be advantageous, that the Committee appointed should proceed in preparing the prospectus, and the attention of the Company shall be directed to the matter at the earliest opportunity, as I am anxious to forward, by every means in my power, an establishment likely to prove of great service to the Agriculture of the North of Ireland.—I remain, dear Sir, your obedient servant,

CHARLES WARNER.

William Marshall, Esq. Londonderry.

Resolved unanimously—That the thanks of this Society be given to the Worshipful, the

Grocers' Company of London, for their communication, through their agent, Mr. Warner, of their readiness to accomodate this Society with the house and demesne of Grocers' Hall, for the establishing of an Agricultural Seminary, and that the same be conveyed in the most respectful manner.

Resolved—That a subscription, in shares of £25 each, be opened for establishing said Seminary, as follows:—

We, the undersigned, subscribe one, two, or more shares of £25 each, for the purpose of establishing a Seminary at Grocers' Hall, for general education, somewhat on the plan of the institution of M. Fellenberg, at Hofwyl; comprising instruction in the theory and *practice* of Agriculture, with Classics, Mathematics, Drawing, Surveying, Engineering, and other acquirements.

Resolved—That when 50 subscribers of £25 each shall be completed, the Secretary shall summon a meeting to consult upon a plan for the establishment.

The following noblemen and gentlemen instantly subscribed:—

	Shares.		*Shares.*
Lord Aberdeen	4	Rev. F. Brownlow	1
Lord Caledon	4	A. Lyle	1
Lord Bishop of Derry	4	Thomas Scott	1
Lord Waterford	2	Rev. T. Richardson	1
Lord Bishop of Raphoe	2	Richard Hunter	1
Sir G. F. Hill, M. P.	2	William P. Kennedy	1
Sir Charles Style	2	Thomas Ramsay	1
Sir R. Ferguson	2	Cary M'Clelland	1
Sir Samuel Hayes	2	J. A. Smyth	1
Sir James Bruce	2	Andrew Ferguson	1
Sir Robert Bateson	2	William Marshall	1
Sir James Galbraith	2	Stewart Bruce	1
W. Stewart, Esq. M.P.	2	John Montgomery	1
G. R. Dawson, Esq. M.P.	2	Thomas Staples	1
Marcus M'Causland	2	Rev. Spencer Knox	1
Charles Warner	2	Conolly Gage	1
B. Beresford	2	George Young	1
H. Lyle	1	Ross Smyth	1
H. B. Hunter	1	John Rea	1
H. Lyle, Oaks,	1	Rev. John Young	1
W. L. Cuningham	1	John Dysart	1
James Sinclair	1	Rev. George Hay	1
William Miller	1	John Fenton	1
Robert Bateson	1	John Johnston	1

Resolved—That Sir R. Ferguson, Bart. James Sinclair, Esq. John Fenton, Esq. W. Miller, Esq. and the Secretary, be a committee to take charge of the list of Subscribers to the Seminary, and endeavour to procure further subscriptions.

☞ Such gentlemen as propose to subscribe to the above establishment are requested to send their names and the number of Shares they will take, to the Secretary, without delay.

The following petition from sundry poor woollen weavers of Munterloney, praying aid, being read—

To the Right Honorable and Honorable, the Right Reverend and Reverend the North West of Ireland Society.

The Petition of the Woollen Weavers of Lower Badony, commonly called Munterloney,

MOST HUMBLY SHEWETH

That petitioners are humble, industrious individuals, who subsist chiefly by weaving woollen cloth, blanketing, flannel, and druggets, in the manufacture of each of which, and particularly of cloth, they have, of late, gradually but greatly improved; and that they have also produced some creditable specimens of carpeting, notwithstanding the imperfect structure of their looms, deficiency of means, and inconvenience of situation; that petitioners have learned, with pleasure, that the object of the North West Society is to encourage the population of the N. W. District towards improvement in Agriculture, Arts, and Manufactures: but, that while petitioners rejoice to hear that great encouragement continues to be held out to the linen loom, they observe, with deep regret, that no notice has hitherto been taken of their's, the woollen loom, at least in this part of Ulster. That petitioners are natives and inhabitants of several glens of Munterloney, and that they consider their said glens natural pastures for, and best employed when stocked with, sheep; and that they are capable of producing large quantities of good wool when so stocked. That Mr. Montgomery, the Society's Surveyor, has visited several of their looms, and looked, with seeming gratification, on many pieces of their work, in various stages of progress from the wheel to the finished state, and appeared much pleased with the texture, grists, and manufacture—that he requested to have specimens of finished cloth from each, and which he promised to forward to the Society's Secretary for inspection—That petitioners regret that their looms produce only narrow cloth, because they cannot, by hand, throw the common shuttle to a greater breadth; but humbly conceive, that with a little assistance, they would soon introduce the machine or fly shuttle, with suitable reed and heddles into general use in the manufacture of broad cloths, both coarse and fine; and they most humbly offer their unanimous opinion, that cloth manufactured in their own looms, at their humble homes, will always prove of superior quality, although it may be of an inferior appearance, than cloth of the same grist produced at any great manufactory—That the unfitness of their looms, is the chief reason why petitioners so seldom weave fine woollen cloth. That the woollen yarns, commonly spun for cloth in the country, vary from four to twelve cuts from a pound of wool; that from twelve to sixteen cuts per pound is accounted fine; and that above sixteen to twenty-two or twenty-four cuts per pound, is accounted very fine; and that but few have reeds & heddles fine enough to work it; that generally, nine pounds of wool spun to from thirteen to sixteen cuts per pound of wool, produce ten and sometimes eleven yards of dressed cloth, of which carding and spinning costs from 8d. to 1s. per lb. —weaving from 3d. to 4½d. per yard—dying and dressing, at the Tuck mill, from 10d. to 1s. per yard for the dressed cloth, as the dying stuffs are more or less expensive—That the thickening and pressing machinery, at the Tuck mills, are also defective.

That both the woollen weavers and clothiers of Munterlony entreat the N. W. Society to include them among such of the N. W. District as may be deemed objects of patronage and encouragement; and petiers will, as in duty bound, ever pray.

Francis M'Cullough, Seskinshuel.
Michael M'Cullough, Seskinshuel.
Owen M'Cullough, Crockanbew.
Michael Fox, Crockanbew,
William M'Kenna, Glenchiul.
Charles M'Cann, Gortin.
Phelix M'Cullow, Gortin.
Michael M'Namee, Lennymore.
Patrick M'Namee, Lennymore.
Laurence M'Namee, Lennymore.
Michael M'Gurk, Formal.
Terence M'Namee, Formal,
Matthew M'Cawil, Allagh.
James Robinson, Belltrim.
John M'Farland, Ryland.
Roger Mahon, Ryland.
Patrick Kelly, Garvagh
Edward M'Aleer, Gorticastle.
Patrick M'Aleer, Gorticastle.
Michael Bradly, Gorticastle.
Patrick Bradly, Glenlark.
Bryan M'Swigan, Glenlark.
James Kane, Glenlark.
James M'Anenny, Glenlark.
Patrick M'Anenny, Leckin.
Edward M'Rory, Leckin.
Shane M'Anenny, Colkahullion.
Thomas M'Crory, Clothier, Allagh.
George M'Keon, Clothier, Cashel.
Joseph M'Dermott, Crockenbuy.
Joseph Teague, Crockenbuy.
John M'Nulty, Crockenbuy.

Dated this 7th August, 1824.

We, the undersigned, do fully approve of the sentiments of the above petition, and do recommend it to the notice of the N. W. Society.

Edward Sterling Roberts, *Rector of Badony Lower, Diocese of Derry, and county of Tyrone.*
C. Hemphill, *Presbyterian Minister, Badony.*
Bernard O'Neil, *vicareous, Badony.*
John M'Cann, *P. P. Lower Badony.*
Robt. Warwick, } *Church Wardens,*
C. M'Laughlin, } *Lower Badony.*

Resolved—That the sum of £10 be placed at the disposal of Mr. Sinclair and Mr. Smyth, for the purpose of encouraging the extension of the woollen manufacture in petitioners' district.

The Society having taken into consideration the accounts of the Society's Magazine,

Resolved—That Sir R. Ferguson, Bart. Wm. Miller and John Fenton, Esqrs. be appointed a Committee to examine the accounts and expenditure of the Magazine, and to make such arrangements as may appear to them requisite for its future regulation.

The Secretary having stated to the Society the delay and irregularity, in the manner in which many of the Branch Societies made up and sent in their accounts;

Ordered——That the Corresponding Committee do prepare a form of account to be furnished to each Branch Society, and that notice be given to their different Secretaries, that unless their accounts be made up and furnished to the Secretary of this Society, and the amount of their subscriptions lodged with the Treasurer, ten days previous to the autumnal meeting, in each year, they will not be received; nor will this Society, for that year, make any grant from their own funds to the Branch whose Secretary so neglects to make such return.

Resolved—That where money has been granted to any Branch Society, the Committee of such Branch shall not be at liberty to dispose of any part thereof in medals.

Sir G. F. Hill, Bart. having stated to the Society the progress made respecting the North West Canal;

Resolved—That the Committee, viz. the Earls of Aberdeen, Belmore, and Blessington, and Sir George Hill, &c. formerly appointed, be requested to continue their exertions, and take such steps as may appear to them requisite, in furtherance of this Canal, and that parliamentary notices be given, so as to authorize the introduction of a Bill into Parliament, to legalise the construction of said Canal.

Sir James Bruce, Bart. having communicated from the chair, his intention of presenting to the Society, a Cup similar to that awarded to him at this meeting, to be competed for by the best of the prize Bulls, and for and under the same terms, and subject to the same rules and regulation as the last;

And Mr. Sinclair having moved that Sir J. Bruce do now leave the chair, and that the Earl of Caledon do take the same, which being done,

Resolved unanimously—That the thanks of this Society are due, and be presented to Sir James Bruce, Bart. for his proper conduct as one of the Vice-Presidents of this Society, during the period in which he has been in office, and more particularly for the above very handsome and liberal communication.

The Secretary having reported that in consequence of the resolution of a former day, to admit gentlemen not resident or holding property in the district, to be ordinary members several had since been admitted whose subscriptions amounted to about £12—the Lord Bishop of Derry, in order to encourage this Branch of the Society, proposed to subscribe £5,

Resolved unanimously—That Sir R. Ferguson, with the non-resident members present, be a committee to form a scale of premiums, agreeably to the regulations, and that the sum of £40 be placed at their disposal for said purpose.

Resolved unanimously—That Mr. W. Marshall having, for the long period during which he has given his valuable and active exertions for the benefit of this Society, as Secretary, uniformly and repeatedly declined all pecuniary compensation for his services;—a piece of plate be presented to him as a mark, however inadequate, of the sense which the Society entertains of them, and that a sum £50 be placed at the disposal of a Committee, composed of Messrs. John Boyd, Acheson Lyle, and Thomas Bateson, for this purpose.

Resolved unanimously—That this Meeting cannot separate without expressing their great satisfaction at the increase made to their subscription, by a number of the noblemen and gentlemen, members of this Society, particularly those of the Marquisses of Waterford and Londonderry, who subscribe each 50*l.* per annum. Signed,

JAMES BRUCE, Chairman.

The following notices have been given, to be taken into consideration, at the General Meeting in April next:—

1st. To alter the days of General Meeting.

2d. To allow non-resident Members to challenge the different cups.

W. MARSHALL, Sec.

The following Premiums were then agreed to for the General Show of Cattle, &c. to take place at Londonderry, in September or October, 1825, as the Society may appoint at their General Meeting, in April next:—

Horses.—To the owner of the best Stallion, in the county of Derry, which shall have been in his or her possession therein, on the 1st of April, 1825, not being a racing horse, but one calculated for husbandry and carriage use, and which shall be let to twenty farmers' mares during the season of 1825, at not more than one guinea each mare, £15

The same for the county Tyrone 15

The same for the county Donegal 15

The Cup, value £25, challengeable for three years.

Any person challenging the Cup to enter his name, and lodge one guinea with the Secretary, on or before the 1st of August, 1825.

Brood Mares.—To the owner of the best brood Mare, with her foal at her foot, in the county of Derry, which shall have been in his or her possession therein, on the 1st of April, 1825, not being a racing mare, but

one calculated for husbandry and carriage use, — — — £10
The same for the county Tyrone 10
The same for the county Donegal 10
To the owner of the best of the three mares — *A Silver Medal.*

Bulls.—To the owner of the best Bull, not less than 2 yrs. old, of any breed, in the county Londonderry, provided he shall have been in his or her possession therein, on the first of August, 1825, and shall have served gratis, at least twenty farmers' cows £6
To the same for the county Donegal 6
To the same for the county Tyrone 6

Yearlings.—To the owner of the best yearling Bull in the county of Londonderry, provided he shall have been in his or her possession therein, on the 1st of Aug. 1825, £4
The same for the county Tyrone 4
The same for the county Donegal 4

To the best of the prize Bulls, a silver Cup, given by Sir Jas. Bruce, Bart. value 20

The Cup to be challengeable for three years on a deposite of one guinea with the Secretary from each challenger, on or before the first of August, 1825.—The person who may win the Cup to be subject to challenge for like period.

Cows.—To the owner of the best Cow in the county of Londonderry, fit for breeding and the dairy, and which shall have been in his or her possession therein, from the 1st of August, 1825, — — £3
The same for the county Tyrone 3
The same for the county Donegal 3
For the best of the three, *A Silver Medal.*

Heifers.—To the owner of the best Heifer in the county of Londonderry, which shall have been in his or her possession therein, from the 1st of August, 1825, £2
The same for the county Tyrone 2
The same for the county Donegal 2

Sheep.—To the owner of the best Ram of any breed, in the county of Londonderry, which shall have been in his or her possession therein, from the 1st of August, 1825, £5
The same for the county Donegal 5
The same for the county Tyrone 5
To the owner of the best of the three prize Rams, the challengeable cup, value 20

The cup to be challengeable for three years, on a deposite of one guinea with the Secretary, from each challenger, on or before the 1st of August, 1825. The person who may win the Cup, to be subject to challenge for like period.

To the owner of the best pen of Ewes (not less than five,) in the county of Londonderry, with reference to fleece and carcase, which shall have been in his or her possession on the 1st of August, 1825, — £5
The same for the county Donegal 5
The same for the county Tyrone 5
To the owner of the best of the three Pens, *A Silver Medal.*

Swine.—To the owner of the best Boar in the county of Londonderry, which shall have been in his or her possession therein, from the 1st of August, 1825, — £5
The same for the county Donegal 5
The same for the county Tyrone 5
To the best of the three, *A Silver Medal.*

To the owner of the best breeding Sow in the county of Londonderry, which shall have been in his or her possession from the 1st of August, 1825, — — — £5
Same for Donegal — — 5
Same for Tyrone — — 5
To the best of the three, *A Silver Medal.*

Flax.—To the farmer who shall produce the best parcel of Flax, his own growth, not less than ten cwt. a silver Cup, value £10—challengeable for three years.

For the best parcel, not less than 5 cwt. £5
For the best parcel, not less than 2 cwt. 3
For the second best — — 2

The flax to be sold by auction, in the market of Derry, on the day of the Show, and the winner of the Cup not to be allowed to compete for the money premiums.

N. B. Any person challenging the cup, to enter his name, and lodge 5s. with the Secretary, on or before the 1st of August, 1825.

Any Horse, Bull, Cow, Heifer, Sheep, or Swine, &c. that has already obtained a first prize, at any of the Society's shows, is hereby disqualified from competing for money.

Conditions.—The owners of all Cattle intended to be shewn, are to give notice of such intention to the Secretary, two days previous to the day of show, and the owner of all Cattle and Flax coming above ten miles, who shall not obtain a first prize, will be allowed a reasonable charge per mile, provided the Judges certify their having sufficient merit to entitle him thereto—and generally, premiums may be withheld for want of merit. The least neglect in giving notice in time to the Secretary, will disqualify the Cattle or Flax from being shewn.

The owner of a Bull must prove that he gave public notice that his Bull was ready to serve, gratis, to the extent of twenty farmers' cows, when required, or that he had actually served them.

RESOLVED—That where a medal only was granted, the person obtaining it must be considered as having got a first prize.

SEED OATS.—To the importer of the best Seed Oats, not less than fifty barrels, the growth of 1824, into any port in the North West District, on or before the first of March, 1825, ... £10

Conditions.—Each claimant to qualify on oath, and the claims and a sample of one bushel of the Oats, to be sent to the Secretary of the North West Society, on or before the first of March, 1824.

BUTTER TRADE.—To the person who derives his chief support by farming, and who shall produce the best firkin of Butter, £ 3

Second do. 2

The same conditions apply to Butter as to Cattle, Flax, &c and will be strictly enforced, and the premium Butter to become the property of the Society, on paying the market price of the day.

IMITATION OF LEGHORN HATS.—Manufactured from grass or straw of grain:

For the best three Hats —	£3
For the second do. —	2
For the third do. —	1

PLAT IN IMITATION OF LEGHORN.

For the best 24 dozen yards plat	£3
For the second do. — —	2
For the third do. — —	1

Conditions.—The manufacture must be solely of Irish material, to be proved to the satisfaction of the Society.

Each claimant must be a resident of the N W. District, and must lodge the Hats and Plat for which the premium is claimed with the Secretary, two days before the day of show, with a specimen of the straw or grass used, in its natural state, with root, leaves, stem, and flowering head, and an account of the method employed in preparing and bleaching.

The Society with the view of further improving the breed of cattle, and for the better encouraging those Members who do not reside within their district, have agreed to offer the following premiums, to be competed for by them alone:—

To the owner of the best Stallion which shall have been in his or her possession on the 1st of April, 1825, not being a racing horse, but one calculated for husbandry and carriage use, — — — £15

BULLS.—To the owner of the best Bull, of any breed, not exceeding four years old, provided he shall have been in his or her possession on the 1st of August, 1825, £10

COWS.—To the owner of the best Milch Cow which shall have been in his or her possession on the 1st of August, 1825, £5

SHEEP.—To the owner of the best Ram, which shall have been in his or her possession on the 1st of August, 1825, — £5

To the owner of the best pen of three ewes, with their lambs, which shall have been in his or her possession on the 1st of Aug. 1825, £5

BRANCH PREMIUMS FOR 1825.—To the Londonderry Branch, consisting of 51 Members; a sum of 12*l.* 10s.—which with, 20*l.* paid in by them, makes 32*l.* 10s. and that the same be disposed of as follows:—

Ploughing ...	£9	Heifers and Cows	4 0
Turnips ...	8	Swine ...	3 0
Clover ...	6	Cheese and Butter	2 10

To the Coleraine Branch, consisting of 43 Members, 10*l.* 15s.—which with 8*l.* 10s. paid in by them, makes 19*l.* 5s. to be disposed of as follows:—

Ploughing	L.9 0
Green Crops	4 0
Black Cattle and Swine ...	6 5

To the Raphoe Branch, consisting of 53 Members, 13*l.* 5s.—which with 22*l.* 5s. paid in by them, makes £35 10s. to be disposed of as follows:—

Ploughing —	10	Ditching —	6 0
Turnips —	10	Butter —	3 10
Clover —	6		

To the Kenaught Branch, consisting of 73 Members, £15—which with £35 paid in by them, makes £50 to be disposed of as follows:—

Ploughing —	10	Other Green Crops	7
Black Cattle —	5	Horses and Mares	10
Sheep —	5	Swine —	2
Turnips —	8	Cottages and Fences	3

To the Tirkeeran Branch, consisting of 55 members, 13*l.* 15s.—which with 50*l.* paid in by them, makes 63*l.* 15s. to be disposed of as follows.—

Ploughing	£10 0	Farming Servants	9
Turnips	8 15	Flax dressed	5
Perennial Rye Grass	2 0	Cottages	8
Vetches	3 0	Clover	10
Enclosures	8 0		

To the Moneymore Branch, consisting of 37 members, 9*l.* 5s.—which with 48*l.* 10s. paid in by them, makes 57*l.* 15s. to be disposed of as follows :—

Ploughing	11 15	Black Cattle	8
Clover	10 0	Sheep	5
Turnips	10 0	Swine	3
Ditching	6 0	Farming Servants	4

To the Tubbermore Branch, consisting of 18 members, £4 10s —which with £20 paid in by them, makes £24 10s. to be disposed of as follows:—

Ploughing	6	Cattle	6 0
Clover	4	Ditching with drains and quicks	4 10
Turnips	4		

To the Strabane Branch, consisting of 46 members, £11 10s.—which with £13 paid in by them, makes £24 10s. to be disposed of as follows :—

Ploughing	10 0
Green Crops	10 0
Ditching	4 10

To the Derg Branch, consisting of 19 members, 4*l.* 15s.—which with 15*l.* 10s. paid in by them, makes 20*l.* 5s. to be disposed of as follows:—

Ploughing	5 0	Butter	3
Clover	4 5	Neat Cottages	2
Turnips	4 0	Cattle	2

To the Kilmacrenan Branch, consisting of 46 members, 11*l.* 10s.—which with 7*l.* paid in by them, makes £18 10s. to be disposed of as follows :—

Ploughing	6	Ditching	4 0
Green Crops	6	Potatoes in Drill	2 10

To the Buncrana Branch, consisting of 43 members, 9*l.* 5s.—which with 12*l.* 10s. paid in by them, makes 21*l.* 15s. to be disposed of as follows :—

Ploughing	4	Cottages	3 0
Clover	6	Black Cattle, Sheep, and Swine	2 15
Ditching	6		

To the Stewartstown and Cookstown Branches, consisting of 100 members, 10*l.*—which with 25*l.* paid in by them, makes 35*l.* to be disposed of as follows :—

Ploughing	6	Reclaiming Land	5
Turnips	4	Wheat	4
Clover	5	Neat Houses, Farms, and Fences,	5
Black Cattle	4		
Swine	2		

To the Newtown-Mount-Saville Branch, consisting of 60 members, 7*l.* 10s.—which with 15*l.* paid in by them, makes 22*l.* 10s. to be disposed of as follows :—

Ploughing	5 0
Green Crops	10 0
Fences	3 10
Houses, Gardens, and Compost,	4 0

To the Magherafelt, Castledawson, and Bellaghy Branch, consisting of 48 members £10—which with £12 10s. paid in by them, makes 22*l.* 10s. to be disposed of as follows;

Ploughing	7	Neat Cottages	3 0
Swine	3	Seed Corn	2 10
Green Crops	4	Flax dressed	3 0

To the Caledon Branch, consisting of 48 members 12*l.*—which with 44*l.* 10s. paid in by them, makes 56*l.* 10s. to be disposed of as follows :—

Ploughing	10 0	Farming Servants	3 10
Winter Green Crops	8 0	Pigs	4 0
Clover	6 0	Black Cattle	6 0
Seed Grain	5 0	Flax dressed & Flax-seed	3 0
Wheat	6 0		
Fences	2 10	Liming Land	2 10

To the North Innishowen Branch, consisting of 119 members 29*l.* 15s.—which with 29*l.* 15*s.* paid in by them, makes 59*l.* 10s. to be disposed of as follows :—

Ploughing	10 0	Swine	6 0
Fencing and draining	13 10	Green Crops	10 0
Horses	5 0	Flax dressed	6 0
Black Cattle	6 0	Seed Oats	3 0

EVENING PROCEEDINGS.

CHALLENGES.

We, the undersigned, challenge the Cup, awarded this day to the Earl of Caledon, for the best Stallion—

William Stewart.
Charles Warner.
Thomas Staples.
M. M'Causland.
J. Harvey, Malin Hall.

Open for further challenges to the first of August, 1825.

We, the undersigned, challenge the Cup awarded to Mr. W. Hamilton, for the best Ram. *R. A. Ferguson.*

Open for further challenge to the first of August, 1825.

Printed for the N. W. of Ireland Society by Moss. Hempton.

N.W. SOCIETY'S MAGAZINE.

Vol. II.—No. 50. Wednesday, 27th October, 1824. Price 2d.

☞ That we might present to our readers, a connected view of the whole proceedings of the last General Meeting, the present number accompanies the 49th—of course, none will be published next week.

CHALLENGES.

(Continued from page 392.)

Sir Robert Bateson challenges Sir James Bruce, to show his Bull Calf, exhibited at the present Show, against one of Sir R. Bateson's, at the next Show, for five guineas.

R. Bateson.
J. R. Bruce.

I challenge any member of the N. W. Society to produce one or two yearling Heifers, in calf, at the next October Show, for two guineas. Open until the 1st of August, 1825, on lodging the money with the Treasurer.

Robert Bateson, Miltown.

Mr. J. A. Smyth challenges the N. W. Society to plough, with two bullocks, one-half rood of ground, at the next General Ploughing Match, for one guinea. Open to the 1st December, 1824.

J. A. Smyth.

A sweepstakes of one guinea each, for ploughs, drawn by horses, one rood, on the day of the general Ploughing Match. Open till 1st January.

R. Hunter.
Marcus M'Causland.
John A. Smyth.

Sir James Galbraith proposes to show, at the next October Meeting, for two guineas, his Calf, shewn at this Meeting, against Sir James Bruce's Bull Calf, shown at this Meeting.

James Galbraith.
Accepted. *J. B. Bruce.*

Sir James Galbraith accepts Mr. Delap's challenge to show a Bull Calf, of this year, in his possession, against Sir Jas. Bruce's Bull Calf, shown at this Meeting, for one guinea.

Jas. Galbraith.
Samuel Delap.

A sweepstakes is proposed of one guinea each, to show, at the next October Meeting, a bull calf of this year. Accepted by

Sir James Bruce. *Sir James Galbraith.*
Sir R. Bateson. *Samuel Delap.*

I will produce a three-year-old long horned Bull, superior to any other Bull of the same age, at the N. W. Society Meeting, 1825, for two guineas.

George Macartney.
Accepted by { *Sir James Bruce.*
H. Hunter.
Sir G. Hill.

I will produce a four-years-old long horned Heifer, with a calf at her foot, superior to any other cow and calf of the same age.

George Macartney.
Accepted by { *Sir James R. Bruce.*
H. B. Hunter.

I will produce a hagget Ram, of the Leicester breed, superior to a Ram, the same age of that or any other breed, due consideration being had to shape and wool, for one guinea.

George Macartney.
Accepted. *J. A. Smyth.*

Open till 1st August, 1825.

Mr. Scott will undertake to show any number of acres of Turnips, from one to ten, on reclaimed bog which never produced any other crop before, for two guineas, on first October, 1825.

Accepted. *William Kennedy.*

Mr. Scott will also undertake to show any number of acres, from one to fifteen, of perennial Rye-grass and Clover, on reclaimed bog, on the first of August next, for two guineas.

Mr. Scott will show any number of acres of wheat, from five to forty, against any member of the Society, for two guineas, on the first of August next.

I challenge, for a quantity of double post and rail fencing to enclose forty acres, or thereabouts, against any similar quantity, of equal utility.—Open till first August, 1825.

Charles Warner.

Mr. Gage proposes to show a cattle shed, to hold 25 head or more, better calculated for purposes of economy and utility, than any shed in the North West District, for one guinea, on the 1st March, 1825. Accepted.

William Stewart.
M. M‘Causland.

Sweepstakes of half-a-crown, to go to the gentleman who shall appear at the next October Meeting of the North West Society, in a body coat of the best manufactured cloth, and which shall have been entirely manufactured in the North West District.

J. R. Bruce.
G. F. Hill.
W. L. Conyngham.
R. A. Ferguson.
George Young.
Hugh Lyle.
William Stewart.
George Macartney.
Samuel Delap.
Acheson Lyle.
T. Richardson.
Barre Beresford.
A. Ferguson.
William Miller.
H. B. Hunter.
James Sinclair.
M. S. Hill.
R. Bateson.
R. Bateson, Miltown.
J. C. Beresford.
Thomas Staples.
W. Blacker.
William Marshall.

Open for subscribers till the Monday before the Meeting.

◆

Statistical Reports.—For the best Report of any Barony, Half-Barony, or other District, within the counties of Londonderry, Donegal, or Tyrone, of which the Society have not already received a Report:—

A piece of Plate, value	—	£15
For the second best do. do.	—	10

Each Report to be sealed, and lodged with the Secretary, on or before the 1st of October, 1825.

Report of the Committee appointed to award the premiums offered for Statistical Reports.

Your Committee report, that three Statistical Reports have been laid before them—

No. 1, A Report of the Parishes of Desertmartin, Kilcronaghan, and Ballinascreen.
2, A Report of the Parishes of Tamlaght, Drumachose, Balteagh, and Aughanloo.
3, A Report of the Parish of Raphoe.

The Committee decided, that No. 1 possessed the greatest degree of excellence, being evidently the result of the most careful research, and, as a composition, highly creditable to the author, though defective as regards agriculture. They recommend, therefore, that the second premium should be given to the author, Mr. James M‘Closky.*

With respect to Nos. 2 and 3, though the former contains a considerable portion of useful information, on the topics of which it treats, the Committee did not conceive there was sufficient merit in either to obtain a premium.

Wm. Pitt Kennedy, } Judges.
P. B. Maxwell,

The above Members of the Committee also report, that they do not conceive themselves authorized to come to any resolution with reference to the labours of Mr. Montgomery, having been unable to obtain the assistance of the remaining Members of the Committee; and conceiving any resolution, as to the expedience of further expenditure in this object, a matter of doubt and importance.

Report of Premiums awarded at Londonderry, on Wednesday, 13th October, 1824.

Horses.—To the owner of the best Stallion, in the county of Londonderry, which shall have been in his or her possession on the first of April, 1824, not being a racing Horse, but one calculated for husbandry and carriage use, and which shall be let to twenty farmers' mares, during the season of 1824, at not more than one guinea each mare, £25

The same for the county Tyrone 25
The same for the county Donegal 25
To the owner of the best of the three prize Stallions—a Silver Cup, value 25

The Cup to be challengeable for three years, on a deposite of one guinea, with the Secretary, from each challenger. The person who may win the Cup to be subject to challenge for the like period.

The Claimants for the county of Londonderry, were—Edward Wray, Esq. Messrs. James Tanney Hill, Joseph Moore, Wm. Henry and John Lithgow.

Premium withheld for want of merit.

Claimant for the county of Tyrone—Earl of Caledon.

Premium awarded to Lord Caledon.

No Claimant for Donegal.

The silver Cup awarded to the Earl of Caledon.

Bulls.—To the owner of the best Bull of any breed, in the county of Londonderry, provided he shall have been in his or her possession therein, on the first of August, 1824, and shall have served gratis, at least twenty farmers' cows, if required. 10*l.*

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* This Gentleman, it will be recollected, obtained the first premium last year.

Claimants—Sir James Bruce, Sir Geo. Hill, Rev. William Knox, Rev. Richard Babington, Rev. Thomas Richardson, Marcus M'Causland, Robert Ogilby, Charles Warner, Thomas Carmalt, Esqrs. and Messrs. John Mackey, James Williamson, and Minchin Lloyd.

Premium awarded to Chas. Warner, Esq.

The same for the county Tyrone, £10

Claimants—Rev. Francis Brownlow, Rev. Francis Gervais, James Sinclair, Robert Porter and Edward Sproul, Esqrs.

Premium adjudged to the Rev Francis Brownlow.

The same for the county Donegal 10*l*

Claimants—Rev. William Knox, James Stewart, Henry Stewart, John Harvey, Esqrs. and Messrs. Robert Allen, William Latta and Gabriel Motherell.

Premium adjudged to John Harvey, Esq.

The Cup for Bulls, value £20, awarded, last year, to Sir James Bruce, was challenged by Rev Wm. Knox, Rev Thomas Richardson, Charles Warner, J. A. Smyth, James Stewart, Henry Stewart, James Williamson, and Marcus M'Causland, Esqrs.

Cup awarded to Sir James Bruce.

Cows.—To the owner of the best Heifer or Cow, in the county of Londonderry, fit for breeding and the dairy, and which shall have been in his or her possession therein, from the 1st of August, 1824, — — 5*l.*

Claimants—Lord Bishop of Derry, two; Sir George Hill, three; Sir James Bruce, two; Rev. Richard Babington, two; Barre Beresford, Hugh Lyle and Robert Ogilby Esqrs. and Mr. John Osborne.

Premium awarded to Sir George Hill.

The same for the county Tyrone 5*l.*

Claimants—Sir Jas. Galbraith, two; Rev. Francis Gervais, James Sinclair, and Thos. Ramsay, Esqrs.

Premium awarded to Rev. Fras. Gervais.

The same for the county Donegal 5*l.*

Claimants—Lord Bishop of Derry two, and G. Young, Esq. two.

Premium awarded to the Lord Bishop of Derry.

To the best of the three prize Cows or Heifers, *A Silver Medal.*

Silver Medal awarded to Sir George Hill.

Sheep.—To the owner of the best Ram of any breed, in the county of Londonderry which shall have been in his or her possession therein, from the first of August, 1824, 5*l.*

Claimants—Sir Robert Ferguson, Andrew Knox, Esq. Messrs. John Lithgow, Daniel M'Cain, and William M'Kissock.

Premium awarded to Mr. John Lithgow.

The same for the county of Tyrone 5*l.*

Claimant—Mr. William Murdock two.

Premium adjudged to Mr. Murdock.

The same for the county Donegal 5*l.*

Claimants—Rev. W. Knox, three; Messrs. Henry Hamilton, Wm. Hamilton, David Wilson, Caldwell Motherell, James Logan, and John Wilson jun.

Premium awarded to Mr. John Wilson.

The Cup for Rams, value 20*l.* awarded last year to Mr. Wm. Hamilton, was challenged by Sir Robert Ferguson, Rev. Wm. Knox, Joseph Johnston, John Cromie, and Andrew Knox, Esqrs.

Cup re-awarded to Mr. Wm. Hamilton.

N. B.—The premium for Rams in Donegal withheld from Rev. Richard Homan, only on account of his not having entered with the Secretary, as required by the Regulations.

To the owner of the best pen of Ewes, (not less than five,) in the county of Londonderry, with reference to fleece and carcase, which shall have been in his or her possession on the 1st of August, 1824, ... 5*l.*

Claimants—Sir Robert Ferguson, Robert Bateson, Esq. and Messrs. John Lithgow and David M'Cain.

Premium awarded to Mr. Lithgow.

The same for the county Tyrone 5*l.*

No Claimant.

The same for the county of Donegal 5*l.*

Claimants—Rev. Wm. Knox, Mr. Caldwell Motherell.

Premium awarded to Rev. William Knox.

To the owner of the best of the three prize pens of Ewes. *A Silver Medal.*

Medal awarded to Mr. John Lithgow.

Swine.—To the owner of the best Boar in the county of Londonderry, which shall have been in his or her possession therein, from the 1st of August, 1824. ... 5*l.*

Claimants—Lord Bishop of Derry, Sir G. Hill, Barre Beresford, Esq. and Mr. James Williamson.

Premium awarded to B. Beresford, Esq.

The same for the county Tyrone 5*l.*

Claimants—J. Sinclair and R. Knox, Esqrs.

Judgment—We consider Mr. Knox's as possessing great merit, but as yet too young to be able to have an opinion formed of it for a premium, and consequently we do not adjudge the premium for that county.

The same for the county of Donegal 5*l.*

Claimants—Rev. E. Bowen, and J. C. Ball, Esq.

Premium awarded to James C. Ball, Esq.

The Silver Medal for the best of the three prize Boars, adjudged to J. C. Ball, Esq.

To the owner of the best breeding Sow in the county of Londonderry, which shall have been in his or her possession, from the 1st of August, 1824, — — 5*l.*

Claimants—Lord Bishop of Derry, Barre Beresford, Hugh Lyle, Esqrs. and Messrs. James Williamson and John Osborne.

Premium awarded to Mr. J. Williamson.

The same for the county of Tyrone 5*l.*

Claimants—Rev. Francis Gervais, James Sinclair and Robert Knox, Esqrs.

Premium awarded to Rev. F. Gervais.

The same for the county of Donegal 5*l.*

Claimant—James C. Ball, Esq.

Premium awarded to James C. Ball, Esq.

To the best of the three prize Sows, *A Silver Medal.*

Medal awarded to Mr. Jas. Williamson.

Flax.—To the farmer who shall produce the best parcel of Flax, his own growth, not less than 10 cwt. a Silver Cup, value 10*l.*—challengeable for three years.

For the best parcel not less than 5 cwt. 5*l.*

For the best parcel not less than 2 cwt. 3*l.*

To the second best ... ... 2*l.*

Claimants—Messrs. David M'Clernan, J. Mackey, Wm. Walker, Wm. Latta, Alex. Noble, David Scott, John Lithgow, Edward Lithgow, Wm. Crawford, Wm. Kilpatrick, Chris. Tate, John Bradley, John M'Crea, David M'Clure, James Williamson, Wm. Park, Joseph Thompson, Barre Beresford, Samuel Cochran, and Rev. Wm. Knox.

The Silver Cup awarded to Mr. David M'Clernan.

To Mr. Edward Lithgow — £5

To Mr. Joseph Thompson — 3

To Mr. Alexander Noble — 2.

N. B.—Mr. James Williamson was disqualified from receiving the fourth prize, not having 10 cwt.—otherwise it would have been adjudged to him.

Seed Oats.—To the importer of the best Seed Oats, not less than fifty barrels, the growth of 1823, into any port in the North West District, on or before the first of March, 1824, — — — 10*l.*

Conditions.—Each claimant to qualify on oath, and the claims and a sample of one bushel of the Oats, to be sent to the Secretary of the N. W. Society, on or before the first of March, 1824.

No claimant, in consequence of the different importations not having arrived in time.

Butter Trade.—To the person who derives his chief support by farming, and who shall produce the best firkin of Butter, 3*l.*

Second do. — — 2*l.*

Claimants—Messrs. John Macky, William Walker, William Latta, Caldwell Motherell, Thomas Knox, David M'Clure, James Williamson, J. Lithgow, Andrew M'Crea, William Moore, John Mehan, Robert Bateson.

First premium adjudged to Mr. J. Williamson.

Second do. adjudged to Mr. A. M'Crea.

IMITATION OF LEGHORN BONNETS.

Manufactured from grass:—

For the best bonnet — — 3*l.*

Second do. — — — 2*l.*

Third do. — — — 1*l.*

Manufactured from the straw of grain:

For the best bonnet — — 3*l.*

Second do. — — — 2*l.*

Third do, — — — 1*l.*

Claimants—Miss J. Boake, Mrs. Knox two, Miss M. Gallagher, Miss Christiana Campbell, Miss Jane Campbell, Miss M. Boake, Miss Mary Tooley, Ann Gallagher, Eleanor Roddy.

The Judges were—Lady Bateson, Mrs. Blacker, and Mrs. Montgomery, who awarded the first premium, for a grass bonnet, to Miss Christiana Campbell.

Second to Miss Matilda Boake.

Third to Miss Jane Boake.

The first premium, for the straw of grain bonnet, to Miss Jane Campbell;

And the Judges recommend, that as the third premium, for the straw of grain, was not claimed, it should be given to Mrs. Knox.

Signed,
C. Bateson,
A. Blacker, } Judges
Jane Montgomery,

Amount of Grants made for 1825.

	£	s.	d.
On account of the General Statistical Report of the North West District ...	£100	0	0
Munterlony woollen weavers ...	10	0	0
Plate to the Secretary	50	0	0
Editing Magazine	60	0	0
General Premiums	217	0	0
Premiums to the non-resident Members	40	0	0
Premiums to 16 Branch Societies ...	564	5	0
	1041	5	0

Members of the Parent Society ...	251
Do. of the Branches	859
Total Members North West Society, 14th October, 1824, being the fourth year since the formation,	1110

AGRICULTURAL SEMINARY.

Mr. Sinclair addressed the meeting nearly as follows:—The subject now to be discussed is the most important, which, since its institution, has occupied the attention of the Society. The improvement of the country depends on the improvement of the mind which animates it. We have two great classes of men, operative and inoperative. The distinction is not very philosophical, but it may be understood. By operatives I mean the people, for whom it is proposed to establish an agricultural school on the smaller scale: by inoperatives, I mean those for whose instruction it is, or was proposed, to institute a higher order of academy, ingrafted on, and working with, the other—after the manner of the institution at Hofwyl. When first we met together, the state of Ireland was unknown. We had been accustomed to hear, and most of us believed, that the lower orders of our people were sunk in ignorance. We associated to correct that ignorance. We had also for our object to enlarge the views of the more improved part of our population, to make them recollect, that whilst they were Lords and Commoners, Clergy and Laity, Landlords and Tenants, Agriculturists, Manufacturers, or Merchants, still they were Irishmen—whose duty as well as interest it was, to unite in their endeavours to raise their common country to the rank which Providence had evidently allotted it. We were sure there was among us—capability—that we might be taught. We knew that our people were honest, and that the great darling of economists—capital—might be safely entrusted to our keeping. But we were not aware how soon the trust was to be reposed. To the astonishment of all the world, the repeal of some restrictive laws, place in juxta position the lower orders of Scotland and Ireland, bring them both before the public, and our manufacturers, weighed with the thinking, reading, moral Scotch—our weavers in the immediate neighbourhood of that town, where on account of their misconduct, it was by the legislature thought imprudent to encourage an establishment for the education of our Presbyterian Teachers, compared to those of Glasgow, turn out superior in all that is valuable in men, in skill, in industry, in respect for the law of the land, in attention to the rules of justice. It is delightful to read the accounts of the meetings of our countrymen—to reflect on their moderation and good sense—on their information and their eloquence. I believe there are not men, within the wide extent of the British empire, better educated for the condition of life, in which they are to move, than they. I would not be understood to say they are well instructed. I would only compare them with others of their rank. They are themselves eager for improvement, and woe betide the man, who would not animate them, cheer them, aid them in their efforts! But I would not make use of education to overturn the natural order of society. I would employ it to raise the humble, but I would use it also to raise those above them in regular proportion. Nor let me be told that thus it will be, leaving the education of gentlemen as it stands. I cannot assent to this opinion. Matters of law, physic, or divinity, are not the subject of every day's discourse. More immediately connected with people's wants, are the productions of their countries, the manner of improving them, the soil and its uses, taxation, arithmetic, &c. &c.—these are the subjects which occupy men in their general assemblies; and he who is best versed in them will lead his fellow-citizens. Knowledge is power. If the lower orders find themselves superior to those who have been above them, you will soon see a general change of place—not the elevation of individuals, so desirable in the state, but of classes which causes convulsion. But to what does this tend? To impress on you the necessity of preparing an opportunity of educating your higher orders in a knowledge of those things, which have been hitherto neglected here, of availing yourselves of the present moment, when the learned professions are overstocked, and when the soldier is unemployed, to open a new road for talent, to afford your higher order the means of banishing the fears of Malthusites, by teaching a people how to multiply and thrive. If in rural operations, the machine controls the soil, cattle the machine, labourers the cattle, and the steward the labourers—why should not the lord be equal to direct the steward? And why should Scotland be applied to when the master mind is wanting? Do we propose to build a bridge? an engineer must come from Scotland—construct a road—lay out a garden—regulate an estate? always, and on all occasions, we must send to Scotland. Peter Hutchinson assures us we are wrong. Old M'Comb, whose countryman I am proud to boast myself, assures us, 'we have heads, and hearts, and hands, as good as any, and if Scotland sends us Peter Hutchinson, we shall shortly send them Paddy Hutchinson in return." But we must, in order to give the old operatives fair play, afford the means of education for that purpose to our higher orders. Let us lay the foundation of their economical knowledge, by placing them on the spot, where every position may be brought to the test of experiment, where there are practical agriculturists and mechanics, chemists and botanists, always employed; and where they may have daily oportunities of witnessing the progress of their humble fellow-subjects in the pursuit of knowledge, and of assisting in their improvement; where the task of maintaining the poor or teaching them to obtain a maintenance, shall be prescribed to the rich, and not the momentary gratification of compassionate feelings. As to the manner in which our seminary must be organised, it would be premature to enter on the subject, nor am I equal to the task. The first step will be to provide the necessary capital.

Sir Samuel Hayes said, that there was not an individual present who felt more deeply the importance of the subject under consideration; and he was convinced that such was the feeling of the members whom he had the honour to address. After the very excellent observations of Mr. Sinclair, and the other gentlemen who preceded him, he did not conceive it necessary to dilate on the advantages likely to result from an improved system of education. Surely of all the benefits which could be conferred upon the people, this was that which would most powerfully bind them to their superiors by the cords of gratitude. This was that which would shew them how to enjoy the blessings which they now possess, and to attain improvements hitherto deemed beyond their reach.

From the rapid improvement which has taken place in our district, it is manifest that we have to deal with a people capable of instruction, and anxious for increasing knowledge; it is for the N.W. Society to give every facility, encouragement, and assistance to a scheme pregnant with good—good not of a limited or of a perishable, but of a comprehensive and permanent nature.

Sir Samuel, at the commencement of the meeting, was not inclined to support the extended plan which proposed the erection of a school for the sons of the rich, as well as one for the common class. He had been apprehensive that by attempting too much the success of the whole project might be endangered.—He was not, however, so much wedded to his own opinion, that he could not listen to, or appreciate the arguments of, others. He did confess, that the views of the gentlemen who were the advocates of the extended scheme, had very great weight upon his mind, and that scheme he would most heartily adopt, if it appear to meet the general concurrence of the assembly.

Sir James Galbraith was most anxious that the extended scheme should be adopted.—He knew the sentiments of gentlemen in other quarters of the kingdom respecting the education of their sons, and felt the greatest confidence that the plan proposed would meet general support and approbation.

In consequence of a proposition to that effect it was agreed—that all gentlemen who chose to advance £25, might become shareholders, whether connected with the N. W. Society or not.

Charles Warner, Esq., observed that the project of a school drawn up by the committee seemed to have been lost sight of entirely. In place of a local school, connected with the N. W. Society, the present proposal contemplated one of a national character. Was it to be understood that the negociation with the Grocers' Company was at an end?

James Sinclair, Esq. said that the greater extension of the plan would not interfere with its utility to the N. W. District. He could see no good reason for adopting the circumscribed plan, when the success of the enlarged one was even more certain in consequence of its extension. For liberal and general support might be confidently anticipated. —As to the Grocers' Company, nothing in his mind would be more unfortunate, than to be deprived of the aid and the counsel of that respectable body. He wished it to be understood, and he had no doubt such was the feeling of all the members present in this numerous assembly, that in every step taken, in every project entertained relative to the seminary we should look for their concurrence, and profit by their advice. For this purpose I move that the following resolution be adopted:—" That a subscription, in shares of £25 each, be opened for establishing an Agricultural Seminary"—which was carried unanimously.

CANAL TO LOUGH ERNE.

The following is the substance of Sir G. F. Hill's statement before the N. W. Society on the evening of the 15th inst.—The Rt. Hon. Baronet, before he detailed the steps which had been taken by the deputation appointed to wait on Lord Liverpool and the Marquis Wellesley, begged permission to make a few prefatory observations touching the application from Belfast and the answer it had received. He was confident the assembly he then addressed were too liberal in sentiment, and sufficiently well instructed in the true interests of their country, not to acknowledge that the success or prosperity of any partial district of Ireland was a matter of congratulation to all, and ought in no instance, or on any occasion, to become the subject either of regret or jealousy to them: that they would concur with him in rejoicing at the thriving state of manufacture and trade in the town and neighbourhood of Belfast, whose enterprising spirit had secured to that town many and great commercial advantages, which ought not to excite the North West District to envy, but to emulation. That spirit, he was happy to say, was in activity in this district, so respectably represented on the present occasion; and whilst he offered these remarks, he could not repress the observation, that Belfast had an extensive and wealthy customer in the North-Eastern District, (by far the most populous and thriving in Ireland) which insured the prosperity of that town, whilst the Western quarter far less benefited by a resident gentry, or advanced in wealth and population, was the obvious and natural customer of the city of Derry, certainly not to the exclusion of Belfast or any other place, but justly to be looked to for commercial intercourse by Derry, without any preference to be given through the aid of Government to facilitate the connection of Belfast with the West of Ireland, just the very threshold, and to the prejudice of the inland traffic, of Derry.— He begged leave, however, to express his own conviction, and he felt he almost spoke from authority, that the enlightened mind of the present Government, both in England and Ireland, would never give cause for such an apprehension, for whatever encouragement may have been held out to Belfast, towards the execution of the north-eastern Canal, similar advantages, he was certain, would be afforded for the construction of the one intended to connect Lough Foyle with Lough Erne; but when the Treasury was expected to open its coffers for such purposes, there must be a concomitant expenditure on the part of the petitioners for such works. He believed it to be a principle with Mr. Robinson, upon mature deliberation and experience, that the public good required a reasonable return to the Treasury, for advances of means to complete these undertakings. He in so much might differ (very humbly) from him, and hold the opinion that Parliament and Government would be amply repaid by the future and rapid improvement of this district, although the Treasury should incur the whole expense.

He therefore strongly advised, that the N. W. Society and petitioners for this Canal should immediately give the requisite notices for bringing a Bill into Parliament to legalize the undertaking—to consult maturely on such terms of repayment for Treasury advance as can be afforded and secured, and to instruct their Committee in what manner to proceed, or to give them authority to proceed in their communications with Government and towards the accomplishment of the measure as their judgments shall dictate.

The Trustees of the Linen Board, in order to bring about a reform of the present dirty and slovenly mode of preparing flax for market, have very judiciously granted a sum of money to be distributed in premiums in the north of Ireland. Hitherto the flax-growers of this country have been grossly inattentive to their best interests; and Irish flax is reputed to be the most irregularly prepared for market of any in Europe. The article has, therefore, as might naturally be expected, suffered a serious depreciation in value. In the English market, it is almost unsaleable, while, on the other hand, immense quantities have been imported into that country from Holland, and other countries where flax is prepared in a very superior manner.—It is calculated, indeed, that a sum of two millions sterling is annually sent out of Great Britain, to the continent for the purchase of flax. Why should not this large sum be expended in Ireland? Were the necessary pains taken by our farmers to put the flax in a proper marketable state, it would, we are confident, command a preference over the foreign article. Nor is this the only evil resulting from the improper treatment of our flax. It even operates more or less prejudicially to our great staple commodity. The mellowness and evenness of every description of continental linen, so much admired by those acquainted with that manufacture, arises altogether from the superior quality of the Flax, of which it is composed. Therefore the most beneficial effects may be expected from the proposed premiums.

Premiums by the Trustees of the Linen and Hempen Manufactures, to encourage the cleaning and proper making up of Flax for sale.

The trustees having taken into consideration the large importation of Foreign Flax into Great Britain, and the numerous complaints which have been made to them, of the manner in which Flax is cleaned and made up for sale in the different Export Markets in Ireland, with a view of remedying this evil, and for the better encouraging the cleaning and making up of Flax for sale, have agreed to grant the sum of £336 to be applied in Premiums in the Export Markets of Belfast, Londonderry, and Newry.

To the person who shall sell in any of the above-mentioned Export Towns on their respective Market days, in the months of October, November, December, 1824, and January, 1825, the best cleaned and made up parcel of Flax, either Mill or Hand-scutched, his or her own growth, not less than three

hundred weight, ...	...	£2	10	0
To the Second,...	...	2	0	0
To the Third,...	...	1	10	0
To the Fourth,...	...	1	0	0
To the Fifth, ...	...	1	0	0

When any two or more parcels may be equal in quality, the preference will be given to that of the greatest quantity.

Conditions.—Each person claiming any of those Premiums must produce to the Officer of the Trustees, the Flax, with an Affidavit, stating that it is his or her own growth, and the name of the person to whom sold, and the price.

The Trustees have authorized their different Inspectors-General within their respective Districts, to appoint in each of those Markets three or more persons who may be skilled in cleaning and making up of Flax, to adjudge and award those Premiums where sufficient merit may appear; but the premiums are to be withheld where merit does not appear.

Mr. John M'Cartney, Belfast, Mr. W. G. Marshall, Derry, Mr. H. M'Clelland, Newry, are the Officers to whom the discharge of this duty, with the assistance of the Committee appointed by the Inspector-General, is intrusted, and of whom the necessary form of Affidavit for claiming of this premium may be had.

☞ The above Premiums will commence in Newry on Thursday the 14th; in Belfast on Friday the 15th; and in Derry on Wednesday the 20th of October.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton,

N. W. SOCIETY'S MAGAZINE.

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AGRICULTURAL SEMINARY.

Many of our readers may have observed two neighbouring farmers, occupying ground of similar quality, and setting out with equal advantages, and yet presenting a perfect contrast in their respective conditions. The one shall live in comfort, decency, and respectability, the other in wretchedness, squalidity, and contempt. Nay it will often happen that one man shall thrive although under a smart rent, while his neighbour who has land for a mere trifle will scarcely be able to keep a house over his head. Would such men thrive if they had their land at ever so low a rent?—justly we may conclude that the life of indolence to which the tenant might then resign himself would be ruinous to the landlord, and unfriendly to the prospects and the character of the tenant. A certain degree of employment is good for mind and body—but if a hulking fellow conceives that he is above the necessity of working, and sets up for a man of pleasure, it is easy to account for the distress and degradation to which he speedily reduces himself. When his more industrious neighbour is mending ditches at home, our gentleman is breaking heads, or getting his own broken in the next market town, when the one is spending his money the other is earning more, while the one is wasting his time, the other is improving his hours to some useful purpose. Who has not observed how rapidly not merely small farmers, but even men of extensive property go down the hill, when indolence has taken possession of them, and all the vices of which indolence is the parent? Drinking, gambling, fighting, vagabondising in every form, are the amusements, which prevail among a peasantry who are destitute of habits of industry. And if such are the general features of any district, is it wonderful that outrage, pillage, barbarity, sedition, and conspiracy should break out incessantly, to the disgrace of the country and to the terror of its better disposed inhabitants.

In our neighbourhood the country people are, generally speaking, industrious and economical, among the better kind of farmers a spirit of emulation has sprung up within these few years, most honourable to themselves and pregnant with the most happy consequences to the country. Many young farmers of the present day exert themselves more and to better purpose, than their indolent and slovenly forefathers, they have a better knowledge of their business, and are more disposed to avail themselves of that knowledge. What is still better, they are convinced that there is still great room for improvement, and whenever any safe or reasonable change is proposed to them, they are ready to adopt it.* Much of this may be justly ascribed to the guardian care of the North West Society, the grand object of whose labours is the substantial improvement of our district, the amelioration of its inhabitants in mind, in body, and in outward estate.

Such farmers as have [illegible] stationary will no doubt gradually profit by the good examples on every side of them. Some whom we knew to have been filled with suspicion, or with hostility to the operations of the N. W. Society have surrendered to the force of conviction, and even joined its ranks. And it is only justice to the distinguished characters who patronise the Society, and who so liberally contribute to its prosperity, to say that their zeal and public spirit deserved the return of good feeling, which has been manifested by the respectable tenantry.

Still it must be confessed that little progress if any has been made in many portions of our district; how far this is to be ascribed to the Landlords, and how far to the people themselves we cannot pretend to say—There are probably faults on both sides. The time may come when the influence of the N. W. Society, like the rays of the sun will diffuse life and heat even in those neglected regions, and smiling industry and cheerful content will reign where malignant passions now hold their sway. Even in the most improved quarters there are some farmers to be met with, who are not ashamed to display the symbols of their own debasement in open day, whose houses, whose cattle, as well as themselves and children are very nuisances. The number of these is every day diminishing, for the fashion sets against them, and in a short time the common apology for carelessness will not apply—*I do as my neighbours do.* Where in passing through a well cultivated country the miserable patches of these miserable cultivators offend the eye, there is a consolation in the hope, that better husbandry may rapidly extend itself, and that these foul blots may soon disappear for ever.

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* *The Branches of the North West Society* have had an admirable effect in this way, by rousing and keeping alive a spirit of improvement, and by pointing out specific objects of attention essential to good husbandry.

It has been already observed that it is not merely to the external condition, but to the moral improvement of the people, that the attention of the N. W. Society is directed.—They wisely consider, that to lay a solid basis for improvement, such improvement as is truly valuable, the mind of man must be dealt with. All other applications are partial, uncertain in their effect, unsatisfactory in their result. Mere bodily endowments, or outward accommodation a people may have in a high degree, and still be wretched, disorderly, degraded. But if we would obtain even these outward things in the greatest perfection and abundance, the path of virtue is that by which we reach them with the greatest certainty. Were it our sole object therefore to create wealth, to enrich and beautify the country with agricultural improvements, and to provide for the amplest enjoyment of the good things of life, place the people under the guidance of moral wisdom, and you lead them to the very source of even temporal prosperity. Had the members of the N. W. Society proposed nothing more than the improvement of the ordinary schools, and stood forward as the patrons of general education, they would have been consulting the public good, and discharging a duty of great importance. But the project which has been begun with so much zeal and spirit, has for its aim, a still greater good than is attainable by the usual modes of instruction, namely, to place within the reach of farmers and of country gentlemen, on moderate terms, a distinct and complete knowledge of agriculture, both in theory and practice. Not only so but to provide for the youthful mind such wholesome aliment, and invigorating exercise, as may enable it to despise mere sensual enjoyment, and predispose it for whatever is *true or lovely, or of good report.* The object of the Agricultural Seminary will not be confined to merely diffusing agricultural information; that indeed will be the leading feature, but an opportunity will be afforded to the pupils, to adorn and to enrich their minds with various knowledge, and by so doing to prepare themselves for introducing into this country, the noble improvements which have placed Britain at the head of the surrounding world, and covered British farmers with well-earned renown.

The time seems auspicious for the plan in contemplation. Improvements of all kinds seem ready to burst in upon us, and we are called upon to place ourselves in a posture to receive them. The sister island, owing to the facility of communication, seems to have approached to us more nearly—the skill and the enterprize of England and of Scotland are waiting to be naturalized among us. That powerful engine—the press—is bringing instruction on all subjects to every man's door, but it is not every man that has a taste for instruction. There are many whose indolence or obstinacy is such, that they would not taste of the stream of knowledge, although it runs at their feet. It is possible to imbue the rising generation with such an ardour for improvement, that they will incline to knowledge as the flowers to the solar ray, and to place them on such an eminence, before the period of manhood, that they will have a great advantage above others in commencing the career of life, not only in consequence of their previous acquirements, but of their taste and ability for attaining still higher improvements.—Editor.

Thomas Paytherus, Esq. of Kensington Square, stated, in a communication to the Secretary of the London Horticultural Society, 9th May, that he had succeeded in destroying the insects which infested the bark of the apple and cherry trees in his garden, by rubbing the parts where they lodged, with the fresh green leaves of the common foxglove (digitalis purpurea.) The insects were not only removed, but did not again appear.—*London Horticultural Transactions, vol. v. p.* 485.

QUESTIONS UPON GENERAL SUBJECTS OF AGRICULTURE.

(*From the Farmers' Magazine.*)

In order that such persons as wish to promote what must be considered the true interest of the country, and are capable of communicating their knowledge, may be at no loss in the choice of subjects, we subjoin a list of several leading questions; answers to which will be highly acceptable.

1. Whether is it most advantageous to the State, that land should be cultivated by proprietors; or that a right to cultivate the soil should be assigned for a limited time, to other persons, upon certain terms, presentations, and reservations?

2. By which class, proprietors or tenants, have improvements been most generally introduced?

3. What proportion of the produce is the possessor of an arable farm capable of paying to the proprietor, upon the supposition, that three-fifths of the same are under corn, and that the crop, upon an average of years, shall be seven bolls (264lbs. each) per acre—one-fifth under clover and pasture; and the remainder, one-half, under turnips and potatoes; and the other half plain summer fallow—it being understood that the possessor shall receive legal interest for his capital stock, a sufficient allowance for upholding his stock, so as it may be equally valuable at his departure from, as at his entry to, the farm: and that his personal income from the farm should not be less than what is usually acquired by merchants and manufacturers, who invest a capital of a like extent in their respective trades?

4. Whether is it conducive to the public good, that restrictive covenants should be laid upon tenants? and if these are for the public good, to what extent should they be imposed?

5. What is the most proper size of an arable farm, where the growing of corn is the chief object, and the grass system only considered as meriting secondary attention?

6. Whether are small or large farms most for national advantage, holding in view the interest of proprietors, the comfort and welfare of the tenants, and the benefit of the State?

7. Does the size of a farm affect the population of the country, under similar management? or, does the number of people upon a given spot of ground, depend upon the system of husbandry adopted? that is to say whether the land is principally kept in pasture or tillage, and whether improvements are neglected or practised.

8. Has the condition of the labouring peasantry been meliorated within these fifty years? It is not meant here to enquire, whether wages have been raised; but, whether are they better fed, better clothed, and more comfortably accommodated?

9. Whether is it most for the public good, that the ground should be ploughed by horses, or by oxen, holding in view the original outlay in purchasing the stock, the expense of supporting each kind, the quantity of labour they are capable of performing, and the value of the animals at the latter end? The attention of those who work, or have worked oxen, is particularly requested to this question.

10. What is the sum, per acre, required to stock a farm of arable land, where the horses and implements are of the best kind, and where the tenant enters at Whitsunday, and cannot receive any benefit from the farm till the succeeding crop is reaped.

264
756
264
359 lb
25 3/
7
17 7/

11. If land is exclusively kept in grass.—Whether is the State equally benefited, as if aration was occasionally introduced?

12. Does grass land improve, when kept to a great age? and, if it does, is the improvement equal to what may be gained from breaking it up, fallowing it after a few crops, and sowing it down with fresh seeds?

13. If land is kept in grass, which is the most profitable way of stocking it, with cattle or with sheep? If with the former, whether is the large or small kind most advantageous? If with the latter, whether is the short Highland sheep, or any of the varieties of the white-faced kind most profitable?

Any answers to this question should be regulated by the soil, climate, and situation of the farm, and by the demand afforded at the contiguous markets where the stock is to be re-sold.

14. Is there a necessity for smearing sheep—and, what is the best method of doing it, for the safety of the animal, and of the least prejudice to the wool?

15. Is the milking of ewes of advantage or disadvantage to the farmer?

16. Whether are turnips most profitably used in feeding cattle or sheep? If the former, whether should they be consumed at the stall, in an open yard, or in a grass park. If by the latter, whether should the sheep be confined in hurdles, or stakes, upon the spot, or have the turnips brought to them in an adjoining grass field? and, will the expense of carriage be repaid by the superior value of the animal?

17. Whether should turnips be raised according to the broad-cast way, or in drills? and if they are taken as a fallow crop, in which method will the land be cheapest and most effectually cleaned?

18. What is the cause of black, or smut, amongst wheat? and, if the cause cannot be assigned, what is the best preservative against this disorder?

19. What is the cause of the curl amongst potatoes? and is any other method found out to prevent it, than by procuring fresh seed from high lands, or late soils, where it was not fully ripened?

20. Can waste lands be improved in a more profitable manner than by planting them with barren trees adapted to the soil and climate? and what may be the expense of planting 100 acres of such land, fencing it completely, and training the trees up? and, whether the value of the grass, and the thinning of the trees, in a few years, would not exceed any profit which could accrue from the land in its original state?

This last question is so materially connected with the welfare of the kingdom, that we cannot but recommend it to the notice of those who are versant in matters of this kind, with the greatest earnestness. It is obvious, that large tracts, in almost every county, cannot be improved in any other manner; and, while we are dependent upon foreign nations for a supply of timber, it is an object of importance to enquire, whether it is not in our own power to raise a sufficient quantity at home, and whether this might not be done with profit to those who embarked in such undertakings?

Though we have suggested the above as leading questions to our correspondents, we by no means attempt to confine their investigations within such narrow bounds. Any fact, which will throw light upon husbandry, or contribute to promote its further improvement, will be acceptable. Freedom of inquiry we wish to encourage—and those who choose to render us assistance in the undertaking we have embarked in, may confidently rely, that their favours will be gratefully acknowledged.

CURL IN POTATOES.

(Continued from page 383.)

Cure or Prevention.—Mr. Knight suffered a quantity of potatoes, the produce almost wholly of diseased plants, to remain in the heap, where they had been preserved during winter, till each tuber (potato) had emitted shoots of three or four inches long. These were then carefully detached, with their fibrous roots, from the tubers, and were committed to the soil, where having little to subsist upon except water, I concluded the cause of the disease, if it were the too great thickness of the sap, would be effectually removed; and I had the satisfaction to observe that not a single curled leaf was produced, though more than nine-tenths of the plants which the same identical tubers subsequently produced, were much diseased.

In the spring of 1808, Sir John Sinclair informed me that a gardener in Scotland, Mr. Crozer, has discovered a method of preventing the curl, by taking up the tubers before they are nearly full grown, and consequently before they became farinaceous—by taking his potatoes, whilst immature, from the parent stems, he probably retained the sap nearly in the same state to which my mode of culture reduced it.—*London Horticultural Transactions, Vol. I. page* 192.

Probably the same effect might be more readily attained by planting curled seed in ground either naturally wet or moist by art—humid soil may be made so by being manured with sea wrack—probably on any good soil irrigation would cure the curl; these suggestions occur at the moment, and practical men will judge whether they are worth a trial.

SOUTHERN CULTIVATOR.

(From the Ulster Farmer and Mechanic.)

Mr. Editor—It has long been a question amongst Agriculturists whether, in planting potatoes, large sets are more advantageous than small ones, and whole potatoes preferable to sections or parts of the bulb. In order to settle this question, and at the same time to ascertain, as far as I could, whether drill potatoes were more productive than those planted in the ridge or lazy bed mode, I tried the following experiments, and now request you to publish the result.

About 12 months ago I ploughed a field, which I harrowed in March last, and in a few weeks ploughed and harrowed again.—The ridges were about 8½ feet broad, and two of these which were contiguous to each other, I made the site of my experiments. In one of these, three drills were made two feet nine inches asunder, which were well manured with good farm yard dung and planted with a kind of potatoes called seedlings—each potato being 1 foot 3 inches separate from the one next to it in the same drill. The order was as follows.—At the head of each of the three drills was planted a whole potato weighing 8 ounces—at the distance of 1 foot 3 inches from it was planted the half of an 8 ounce potato, the rose end—below that at the same distance was planted the *other half* or *stalk end*—then at the same distance below that a set of an 8 ounce potato having three eyes, then below that a set with two eyes, then below that a set with one eye, and lastly a set with a small eye not thicker than a goose quill.

After this, a new series commenced of sets of 6 ounce potatoes—placed exactly in the same order and plan, as to wholes, halves, &c. &c.—And at the close of it another series with four ounce potatoes—and then another with two.—The whole series of experiments was then again repeated in precisely in the same manner.

The ridge planted in the Lazy Bed way got the same quantity of manure. The rows were placed in it one foot three inches asunder, and there were five sets of the same seed planted in each row across the ridge, corresponding in every other respect to the seed and series already spoken of as planted in the drills. Here then was a fair subject of comparison. On the 23d instant, you Mr. Editor, and the Editor of the Belfast News-Letter, came to the ground, saw the produce dug out and took notes of the various results. You have it therefore in your power to compare your statement with the following one which I send for the satisfaction of your readers, and if you think it worthy of a place in your very useful work, you shall perhaps receive from me an account of some more experiments.

I am, Sir, &c. Cultivator.

Kingsland, co. Down, Oct. 23, 1824.

First series commences with a whole Potato in No. 1 both in the Drills and Ridges.

In Drill Ridge, 3 rows.	lb.	oz.	*In Lazy Bed, 5 rows.*	lb.	oz.
1 Produce	10	14	1 do. Whole	14	7
2 Rose half	10	8	2 do. Rose half	10	3
3 Stalk half	7	12	3 do. Stalk half	7	15
4 Three eyes	7	12	4 Three eyes	7	5
5 Two do.	8	5	5 Two do.	9	5
6 One do.	6	13	6 One do.	5	15
7 One eye and little substance	1	5	7 do. & little substance	1	13

The above is from Potatoes of 8 oz. weight.

SECOND SERIES.

1 Whole	13	4	1 Whole	10	14
2 Rose half	7	6	2 Rose half	6	2
3 Stalk half	9	12	3 Stalk half	5	15
4 Three eyes	7	6	4 Three eyes	8	4
5 Two do.	8	6	5 Two do.	8	2
6 One do.	7	8	6 One do.	9	1
7 One eye and little substance	1	8	7 One eye and little substance	1	7

The above from Potatoes of 6 oz. weight.

THIRD SERIES.

1 Whole	10	3	1 Whole	9	14
2 Rose half	6	14	2 Rose half	7	14
3 Stalk half	7	11	3 Stalk half	7	15
4 Three eyes	7	7	4 Three eyes	6	6
5 Two do.	9	1	5 Two do.	7	5
6 One do.	2	12	6 One do.	8	14
7 One eye and little substance	0	4	7 One eye and little substance	2	10

The above from Potatoes of 4 oz. each.

FOURTH SERIES.

1 Whole	7	2	1 Whole	4	15
2 Rose half	9	2	2 Rose half	7	0
3 Stalk half	5	11	3 Stalk half	6	15
4 Three eyes	5	2	4 Three eyes	5	11
5 Two do.	4	12	5 Two do.	4	1
6 One do.	1	8	6 One do.	3	5
7 As above	0	9	7 As above	0	5

The above from Potatoes of 2 oz. weight.

RECAPITULATION OF WEIGHT.

Drills.			*Lazy-bed Ridge.*		
1st series ...	53	5	1st series ...	56	15
2d series ...	55	2	2d series ...	49	13
3d series ...	44	4	3d series ...	50	14
4th series ...	33	14	4th series ...	32	4
	186	9		189	14
				186	9

The Lazy bed exceeds the Drill by 3 5

The Experiments repeated.

1 Whole	15	8	1 Whole	16	0
2 Rose half	6	8	2 Rose half	7	4
3 Stalk half	8	12	3 Stalk half	8	0
4 Three eyes	9	10	4 Three eyes	8	5
5 Two do.	8	10	5 Two do.	7	2
6 One do.	4	2	6 One do.	5	3
7 An omission.			7 An omission.		

The above from Potatoes 8oz. weight.

SECOND SERIES.

1 Whole	9	6	1 Whole	7	12
2 Rose half	7	9	2 Rose half	7	13
3 Stalk half	5	4	3 Stalk half	5	15
4 Three eyes	9	3	4 Three eyes	9	3
5 Two do.	8	3	5 Two do.	6	4
6 One do.	6	6	6 One do.	7	12
7 One small eye	1	1	7 One small eye	0	7

The above from 6oz. Potatoes.

THIRD SERIES.

1 Whole	9	10	1 Whole	11	7
2 Rose half	9	0	2 Rose half	7	3
3 Stalk half	3	8	3 Stalk half	7	14
4 Three eyes	7	9	4 Three eyes	5	3
5 Two do.	7	11	5 Two do.	8	5
6 One do.	5	0	6 One do.	6	6
7 Small eye	2	6	7 Small eye	0	13

The above from Potatoes of 4oz. each.

FOURTH SERIES.

1 Whole	8	11	1 Whole	7	4
2 Rose half	5	11	2 Rose half	5	15
3 Stalk half	4	6	3 Stalk half	5	0
4 Three eyes	3	3	4 Three eyes	3	11
5 Two do.	2	0	5 Two do.	6	11
6 One do.	2	6	6 One do.	3	1
7 Small eye	0	12	7 Small eye	0	3

The above from Potatoes of 2oz. weight.

RECAPITULATION OF WEIGHT.

Drills.			*Lazy-bed Ridge.*		
1st series ...	52	10	1st series ...	51	14
2d series ...	47	0	2d series ...	45	2
3d series ...	44	12	3d series ...	47	3
4th series ...	27	1	4th series ...	31	13
	171	7		176	0
				171	7

The Lazy-bed exceeds the drills by 4 9

The above experiments are, in our opinion, very curious, and throw considerable light on the subject which they are intended to elucidate. Farmers may profit by Cultivator's observations.

In these experiments the quantity of seed used in the ridges was to that in the drills as 5 to 3.—In produce, the *whole potatoes* both in the drills and the ridges, had decidedly the advantage over the other sets, and as it is more important to save land, manure, and labour, than so cheap an article as potato-seed, this circumstance deserves particular attention. Some parts of the drills were overrun with chicken weed—This may perhaps account in some measure for the greater produce in the ridges—and may render it necessary to repeat the experiment—to come to a decisive conclusion on the respective merits of the drill and ridge systems.

A NEW SPECIES OF POTATO.

Some potatoes of a new sort have engaged attention at Liverpool. They are of a long shape, have a smooth, white skin, and appear to have a greater number of eyes than any others: but their peculiarity is their fecundity, and their growing together in clusters as from the centre of a circle. The intelligent grower of them, Mr. John Phillips, of Childwall, gives this account:—

" These potatoes were presented to the grower by Mr. Sheppard, of Liverpool Botanic Garden, in the spring of 1823, being a new species from Canada. From the above 39 sets were procured, and planted in the beginning of April. The plants came on remarkably well, but were nearly all destroyed by a pig, which got into the garden; what remained were reserved for sets the following year, but were diminutive and unripe when taken out of the earth. In the spring of 1824 a piece of ground measuring twelve feet six inches by eight feet, was reserved for another trial, and the sets though very indifferent, were planted in that space, at the distance of ten inches asunder and fifteen between the rows. The crop was taken up on the 8th of October, and produced 514 potatoes, weighing 103 lbs. Many of them were found growing in clusters of six and seven, and in measuring some of the largest, they were found to be 7½ and 8 inches long, and 6½ inches in circumference. This potato is of the kidney species, thin skinned, and remarkably good, either roasted or boiled; and being what is called a remarkably good cropper, will be found serviceable either for the table or for cattle. It will not answer as an early potato, being then sweet and waxy; but when ripe is perfectly white and mealy.—Should the next year's crop be proportionally productive, there will be sufficient to dispose of so as to make the potato general.

	KINDS SOWN.				TOTAL.	Saved this year.	Dutch method. Acres.	Acres sown.
	American.	Dutch or Riga.	British.	Home saved				
Antrim	1900	1900	30	10	3840	—	20	7500
Armagh	500	5000	300	200	6000	1000	—	15000
Derry	9600	2070	60	40	10770	—	—	26000
Tyrone	5500	2100	—	200	7600	200	—	15360
Donegal	3500	1790	—	60	5350	60	—	10700
Down	1550	1564	23	37	3174	100	50	6848
Fermanagh	500	355	100	5	960	10	—	1700
Cavan	975	325	—	—	1300	—	—	2500
Monaghan	800	960	140	100	2000	300	—	3500
Meath	—	—	—	—	500	—	—	—
Louth	970	1370	—	190	2530	150	—	4427
King's Co.	330	70	—	—	400	60	—	760
Queen's Co.	47	4	—	4	55	—	—	100
Longford	530	80	—	40	650	—	—	1200
Kildare }	26	—	—	—	26	much saved.	—	50
Wicklow }							—	
Carlow	20	—	—	16	36	do.	—	60
Wexford	60	6	—	50	116	do.	—	200
Kilkenny	290	15	—	20	325	60	9	650
Westmeath	940	70	—	42	1052	—	—	1841
Dublin	11	6	—	—	17	—	30	31
Waterford	150	—	—	450	600	700	—	2000
Tipperary	196	156	12	36	400	500	—	800
Clare	300	100	—	150	550	—	—	900
Kerry	1188	—	537	458	2183	—	20	4054
Limerick	2135	80	—	80	2295	—	—	5000
Cork	1280	—	210	190	1680	—	—	3255
Mayo	4370	—	—	20	4390	20	—	7755
Sligo	1493	7	—	12	1512	40	—	2646
Leitrim	1200	800	—	—	2000	800	—	1500
Roscommon	1700	286	—	300	2286	500	—	4000
Galway	2050	—	—	150	2200	150	—	4400

Total hhds. sown	64172
Total acres	131737
Of which sown with home-saved seed about	20000

To the Editor of the N. W. Society Magazine.

Sir,

Having seen, in the North West Society Magazine, of the 13th of October, a statement made by Mr. William Hutton, jun. that the value of his crop on a farm of one hundred and twenty acres of land, Cunningham measure, is, at a moderate valuation, worth one thousand pounds, being at the rate of £8 6s. 8d. per acre for the whole farm; and having no idea how such a sum could be made, at the expense stated in his Letter, I would wish, through the medium of your very useful paper, to be informed of the particular mode of culture, the nature and kind of crop, the quantity of manure used, and how procured, and other particulars, to enable me to judge how far his mode of farming is applicable to this part of the country. I have, for many years, held a farm of fifty acres, Irish plantation measure, of very good ground, and although considered a good farmer, could never make £300 a year out of the farm. The allowance of £50 a year for the support of a farmer's family, is much too little—not one half of what it ought to be, and unless every item of Mr. Hutton's expenditure, and the particulars of his crop, are fully stated, I conceive his account would be attended with injurious effects, by raising the price of Land above its real value.—I am, Sir, your very obedient Servant,

A Fermanagh Farmer.

*** The observations on the Seminary are under consideration.

We have had the pleasure of conversing with Mr. Hutton, since the communication above alluded to was inserted—he persists in his first statement, and adds that he is ready to satisfy all enquirers as to every particular of his management. This he can do with the greatest ease, because he keeps a regular account of his expenses, &c. If Mr. Hutton honours our Magazine by perusing it, we have no doubt, he will, when leisure is allowed him, afford the information sought by the Fermanagh Farmer. *We have only to add that nothing can give us greater pleasure, than a free examination of every fact, and principle which shall appear in our publication*— Ed.

THE DAIRY.

Sir—On perusing your last number that gives a list of challenges from the gentlemen assembled at the October Meeting, I observe there are a great many challenges for bulls of all kinds, but very little notice taken of cows and heifers; and in no instance do I perceive any remark made as to the comparative produce of one breed of cows with another.

In this district, where dairies are so productive, the stock that produces most milk and butter will be the most prized; and in order to call the attention of the gentlemen of the Society to the subject, I give the following statement of the produce of an Ayrshire cow:—

She calved in November, 1823, and the week commencing 25th October, and ending 31st October, 1824, her milk produced 6lbs. of butter, avoirdupoise weight—her milk during the week averaged about nine quarts in a day.—She is on grass during the day (not after grass, but pasture regularly fed on since May,) and fed at night on hay and cabbage; whether this is an extra produce I cannot say, but if it will cause some other proprietors of good cows to make the experiment, I am sure it will be very useful information to the working farmers, who may require so much to make a change in their stock.—*Londonderry.* D. G.

To the Editor of the N. W. Magazine.

Sir—I have heard, with pleasure, that the farmers who frequent the Derry and Strabane Markets, have lately sold a considerable quantity of grain by sample; and, as such is the constant practice in all the great English Corn Markets, perhaps the following suggestion might be beneficial both to the buyer and seller. To have small bags made, capable of holding from half a stone to a stone of the grain offered for sale, marked with the owner's name, which, on approval by the buyer, to be delivered to him and fastened up so that on the delivery of the grain there could be no possible dispute, as has frequently occurred, from the buyer alleging, and sometimes, with truth, that the sample differed from the grain afterwards brought. The buyer to get his sample bag back on delivery of the grain.

A FRIEND to FARMERS.

Accounts received from New York and Riga, state that the crop of Flaxseed is excellent and abundant.

900 Barrels of Riga are already arrived, in prime order, to Mr. W. Davenport.

CURRENT PRICES IN DERRY.

Oatmeal,	...	11	6	*to*	12	3	*per cwt of* 120*lbs.*
Oats,	...	0	7	–	0	9	*per stone.*
Barley,	...	0	8	–	0	10	
Potatoes,	...	0	2	–	0	2½	
Beef,	...	0	3	–	0	5	*per pound.*
Mutton,	...	0	3	–	0	4	
Veal,	...	0	5	–	0	7	
Butter,	...	0	10	–	0	11	*per pound of* 18 *ozs.*
Flax undressed		36	0	–	56	0	
Five hank yarn		2	9	-	3	4	*per spangle.*
Four, do. do.		2	7	-	2	10	
Three, do. do.		2	8	-	2	11	
One, do. do.		2	6	-	2	8	

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton.

N. W. SOCIETY'S MAGAZINE.

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On Sowing the Seeds of Forest Trees.

I. *Enclosing.*—This should be done by one or other of the following Fences. 1st, A double stone-dike, height with its coping 6 feet. 2d, A sunk fence faced up with stone 5 feet high, with a hedge along the top of the bank. 3d, A ditch and hedge; the ditch to be 6 feet wide at the surface, 3½ feet deep, and 1 foot wide at the bottom; the earth from the ditch to be used in making up the bank above the thorns, the line of which is to face the ditch, and a dead hedge to be laid along the top of the bank, to 2½ feet high.

II. *The kinds of seed to be sown.*—These are as follows:—

	lb.	oz.
1 Common fir-seed - -	1	0
2 Spruce fir-seed - -	0	8
3 Larch fir-seed - -	0	8
4 Elm-seed - -	0	6
5 Birch-seed - -	0	5
6 Ash-seed - -	0	8
7 Alder-seed - -	0	5
	3	8

The reason for sowing this quantity of 3lb. 8oz. to the Scotch acre, is to ensure an abundant crop after allowing for a considerable proportion which may not grow, or be afterwards destroyed by birds and vermin.—If it were not for this, one-third of the quantity might be sufficient. The mountain-ash or roan, being very ornamental and extremely hardy, a portion of the seeds of this tree may be occasionally introduced.

III. *Soils upon which these seeds may be expected to answer.*—These are, 1st, All light and dry land, whatever may be the nature of the soil or surface. 2d, All land incumbent on stones and gravel. 3d, Dry heaths, the heath to be burnt the year before the land is sown. 4th, All soils that produce whins and broom, the whins and broom to be dug out. 5th, All dry knolls, however deep the soil may be, if the surface be tender. 6th, Land poached by cattle, although damp, but without water standing thereon. 7th, Mosses, whether deep or shallow, if dry. Some distinction, however, is to be made between the seeds, proper for this description of land, and the others; and it is only four of the kinds before mentioned, which Mr. Udney recommends for being sown on mosses, viz. The seeds of common fir, spruce fir, larch, and birch, in the proportions there specified—The seeds of the oak and beech, when these also are to be used, are to be planted by the dibble, and not sown by the hand, as will be afterwards noticed.

IV. *Mode of Sowing.*—All the seeds must be mixed together in a sowing sheet, and the sower must only use the thumb and two fore fingers in taking hold of the seed, which he must scatter very sparingly. If each seed should be placed at half a foot distance from another, that would be sufficient It will be necessary, in order to direct the sower, to set up two lines of poles, at three yards distance from one another, that being space enough to be covered by one cast of his hand. When one length is gone over in this way, one of the lines of the poles is removed, and set up again at the same distance, on the other side of that which is still left standing, and so on over the whole space to be sown. As some of the seeds are heavier than others, and would fall to the bottom of the heap in the sheet, care must he taken to stir them from time to time, so as to keep them mixed as equally as possible, and a calm day must be chosen for sowing them, that they may fall regularly.

With regard to the dibbling of the acorns and beech-mast, the planter must be provided with poles as before, and a dibble shod with plate-iron three inches up from the point, with an apron to hold the acorns. He then begins upon the line of the poles, and makes a hole with the dibble, into which he drops two acorns, and the same at every four steps forward upon this line. When he has got to the end of the field in this manner, the poles are again set up at four steps distance, and he goes on to dibble, and drops the seeds upon the new line as before. In this way the seeds are placed at twelve feet distance from one another; but if any other distance be preferred, it is easy to mark it off and deposite the seeds in the same manner. Two seeds are to be put into each hole, for the same reason that the seeds sown by hand are recommended to be in greater quantity than would be necessary to produce a full crop, namely, as a security against a partial failure,

V. *Covering the Seeds.*—This is to be done by means of a thorn harrow, loaded, with a piece of wood, and the land is to be twice gone over in the same manner as in harrowing a corn-field. A thorn harrow is thought to be better than any other, as it shakes down all the seeds from the tops of the grass, thus placing them out of the reach of birds. The harrow on dry land may be drawn by a horse, but on moss where a horse could not so well be employed, it may be dragged by one or two men. In the case of moss, it will be necessary to draw a ditch round the field, and to intersect it with small drains wherever they are necessary.

VI. *Protection from Vermin.*—The rat, and the water and land mouse, not only destroy the seeds, but they sometimes peel off the bark of young trees, which is thought to be the reason of so many firs dying away after a few years growth. These vermin may be destroyed by a trap formed of a square log of wood, with three small holes on one side to admit the land mice, and three larger on the other for the water mice: each hole having a spring with a piece of cheese, or some other bait fixed within it. A careful person should go through the field twice or thrice a week to examine the traps, and by this means, it is thought that the loss occasioned by the depredations of these vermin might be much prevented. Young tree plants, as well as hedges, are also injured by insects.

The author of the Essay recommends that particular attention should be paid to the goodness of the seeds used, which, in the case of proprietors of wood-lands, ought to be collected by the proprietor's forester or gardener, who should pare down the cones with a knife to ascertain their soundness. The best time to gather the fir-seeds is from October to January. The beech-mast is commonly ready by the end of May or beginning of June.—All the ash keys must be in the rot heap for one year before they are sown; and that heap ought to be turned over at different times to prevent it from heating. The seed separates from the winged pod while in this state, and is then ready to be sown with the other seeds in spring.—*Transactions of the Horticultural Society.*

On the Farina of Potatoes; and the means of preserving them.

The Farina of the Potato, commonly called Potato-starch, is readily obtained by previously washing the potato and grating it fine, and then washing the grated substance in pure water. The farina will precipitate very rapidly, and the skins and other impurities will remain suspended in the water. This water is to be carefully decanted off, and three or more washings in the same manner will be found sufficient to purify the farina effectually. It is then to be dried upon clean canvass sheets or hair-cloth, in the sun and air, with attention; and when perfectly dry it will keep for any length of time. This farina, put up in tin canisters, it is humbly conceived, would prove a most valuable article in long voyages, particularly as it would furnish a very desirable nutritive article, perhaps not inferior to arrow-root powder, prepared as sago is dressed, with a little sugar and a glass of white wine. Let a small portion of this farina (say two ounces), be put upon a plate in a well aired room, and upon another plate put two ounces of fine wheaten flour, and, at the distance of forty-eight hours, let both articles be carefully weighed again.—The potato-farina will be found of nearly the same weight as when it was laid down, but the wheaten flour will be found considerably heavier, particularly if the weather is moist. From this experiment, it is very evident that the wheaten flour absorbs moisture from the air of the atmosphere, more readily than the potato-farina. By this simple discovery, it is humbly conceived that the potato farina possesses extraordinary antiputrescent properties. For distant voyages, in particular, this valuable root may be prepared in another manner, to furnish desirable articles of food for the healthy as well as for convalescents.

Let the potato be fully boiled, skinned, and then bruised to small pieces, and dried upon hair-cloth on common malt-kilns, till it gets quite dry and hard; it will keep sweet a very long time put up in good flour barrels This preparation of the potato, after being pounded in an iron-mortar, will make an excellent mess of soup, and will likewise make a very palatable plumb-pudding, or a plain pudding, with the addition of a little lemon or lime juice, or even good vinegar, and a little sugar.

Lastly, in December or January, in soft weather, before the potato begins to sprout, let them be put in a large tub, and cover them with boiling water. As soon as the water begins to cool, let it be poured off, and the potatoes spread upon a boarded floor, until they are dry. Then put them up in casks, mixed with some fine sand, and they will keep perfectly sweet during spring and summer, without losing their substance by vegetating. The sand will contribute to save them from being injured by frost.

W. P.

DAIRY HUSBANDRY.

(From Transactions of the H. Society.)

During the late depression in the prices of corn, it occurred to the Society, that it might be useful to obtain returns of the produce of the dairy, which, in Scotland, is chiefly confined to the neighbourhood of large towns, and some of the western counties. For this purpose, among others, they offered two premiums in 1821, for the best managed dairy of not less than six cows, in two separate districts; one of them comprehending the counties of Haddington and Linlithgow, and the other, the counties of Sterling, Dumbarton, and Renfrew; and they have since extended them to other districts. The claims to which premiums have been already awarded are, one for the first district, for the year ending November 1821; and two for the second district, for the year ending November 1822.—As there does not appear any thing peculiar in the management of these dairies, it may be sufficient to state here the general results only.

It appears from the affidavit and certificates produced by William Boak, tenant at Livingstone Bloom, in the parish of Livingstone, and county of Linlithgow, that 18 cows kept by him, partly of the Ayrshire breed and partly of the breed of that district, produced in the year ending November 1821, of butter and butter-milk, as follows, viz.—

Butter 3398½ lb.* sold in Edinburgh for	L.236	9	0
130 lb. used in Mr Boak's family,	8	14	0
3528½ lb. being at the rate of near 68 lb. per week,	245	3	0
Milk 37,800 pints† sold in Edinburgh, for	188	4	0
2,555 —— used in the family, ——	12	8	5
40,355. 110½ pints per day,	L.200	12	5
Hence the value of the butter being,	L. 245	3	0
And of the butter-milk, —— ——	200	12	5
Together,	L. 445	15	5
And the number of cows 18, the value of the produce per cow, is ——	L.24	15	3

The first premium for the second district was awarded to Misses Elizabeth and Frances Dunlop, at Househill, in the Abbey Parish of Paisley. The number of Cows kept was nineteen, all of the Ayrshire breed; and the produce, as appears by an accurate statement, amounted in value to £302 9s. 5d. which is at the rate £15 18s. 5d. per cow. This was for the year ending 1st November 1822. The articles were butter, milk, and cream, of each of which a large proportion was used in the family, and the rest sold in the town of Paisley; but the prices are not specified.

The second premium for the second district was awarded Mr. J. Gow, Dumbarton. The number of cows was 12, all of the Ayrshire breed; and the produce was sold in the state of butter and butter-milk. The returns are declared to have been at the rate of £10 per cow, exclusive of butter and milk used in the family, and milk employed in rearing 3 calves. This was for the year ending 1st December 1822.

In none of these communications is the expense of food and management stated, or the interest on the capital employed, or the additional allowance required for supporting the stock; so that the nett profits per cow cannot be ascertained. It does not appear that the thermometer was used in any of these dairies

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* 24 oz. to the lb.—† A Scotch pint is two quarts.

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ERRATTA.—In No. 48, *for* page 386 *read* 384.—In No. 50, 2d col. *for* James M'Closkey *read* John M'Closkey.

CURRENT PRICES IN DERRY.

	s.	d.		s.	d.	
Oatmeal ...	11	6	to	12	3	per cwt of 120lbs
Ditto	1	0	—	1	1	per peck.
Oats.........	0	7	—	0	9	per stone.
Barley......	0	8	—	0	10	
Potatoes ...	0	2	—	0	2½	
Beef.........	25	0	—	40	0	per cwt.
Do. by retail	0	2½	—	0	4	per pound
Mutton ...	0	2½	—	0	4	
Veal.........	0	6	—	0	10	

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold a second Edition will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. HEMPTON, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. III.—No. 1. WEDNESDAY, 24th NOVEMBER, 1824. Price 2d.

The cares of the N. W. Society have been hitherto principally directed to farming affairs, and the Magazine which details the projects and proceedings of that body, has been chiefly occupied with the various operations of the husbandman. At the commencement of a new volume, a retrospect to that which is ended, may serve to inform the public of the nature and objects of this work.

We have further endeavoured, from time to time, to bring forward useful information, on the various plants which are cultivated as *green crops*, and which in modern husbandry, are justly regarded of so much importance.—Among these the potato in this country holds a conspicuous place; accordingly the numerous articles on that subject, selected from different authors for our paper, will, it is hoped, be read with advantage. Clover and turnips, which only for a short time back have been much in use among our farmers, and of which they were, comparatively speaking, ignorant, have been treated of; some very necessary knowledge on these topics by *practical men*, will be found in our pages. The series of original papers, entitled *Extracts from a Farmer's Note-book*, appear well calculated to answer the intention of the intelligent writer, who conveys the results of his own practice and experience, in a clear and satisfactory manner. Rape and vetches, and mangel wurzel, also have been noticed in several papers.

With respect to white crops, peculiar attention has been paid to *flax*. What degree of improvement has been effected by the new method, of which so much has been said, there has been scarcely sufficient time to ascertain. Certain it is, that several parcels have been sold in Derry, this season, equal to any which Holland can produce—and a considerable quantity of seed has been saved by several farmers in this neighbourhood. The premiums by the Linen Board, for the best specimens will, it may be expected, produce a much more marketable article; had they been earlier announced, it is probable their effect would have been more powerful.

The other subjects which occupy a considerable portion of the 2d volume, are *the Dairy*, *the Diseases of Cattle*, *Planting Fruit Trees*, *Domestic Economy*, and what to farmers is of immense importance, the *various kinds of Manures*. On this last subject the account of General Beatson's improvements *by the burning of clay*, and the articles on *saline manures* are considered to convey valuable information.

Other topics, as arts, manufactures, and fisheries, have also been occasionally adverted to, but agriculture has been made the primary object. Agriculture alone presents a wide field for the talents not of one man, but of many; and considering how far we must advance before we become adepts even in this one branch, perhaps it is prudent not to dissipate our efforts over a greater extent than can well be managed.

We did expect that more effectual co-operation would have been given by country gentlemen in rendering our publication both more useful and more respectable. And even supposing them to be more accomplished farmers than they are, possibly the act of arranging their thoughts for the public eye might be found useful, not only to the instructed but to the instructors. The matters circulated in the Magazine if erroneous should be exposed to merited censure, and the evil consequences prevented. If on the other hand any thing right or profitable is advanced, the instruction so given would have tenfold effect, when sanctioned by names whose proper place is at the head of every good and patriotic undertaking. We therefore, with great deference, propose to such gentlemen as have the prosperity of the N. W. District, and the credit of the Society at heart, that they transmit their thoughts on rural affairs, accounts of successful or unsuccessful experiments, hints for improvement, extracts from writers of merit on agriculture, with remarks, and such facts or speculations as may occur in reading or conversation, likely to throw light on agriculture, or any of the arts which claim the attention of the N. W. Society.—

The gentlemen and farmers of Britain do not disdain to make use of the press in seeking for information, or in diffusing it for the general good—the people of Down and Antrim, who started later in this way, are likely to outstrip us, “ not indeed that we envy them, but rather feel surprised”—their numerous periodicals are almost all respectable—the Ulster Farmer is ably supported. Behind our neighbours in the north east, as we are, in the career of improvement, let us bestir ourselves and make vigorous use of all the means in our power, and among the rest, of the press, for should we still continue to lose ground, after displaying such apparent zeal and energy, it would be infinitely ridiculous.

ON EMPLOYING COTTAGERS IN SPINNING.

(From the Irish Farmers' Journal.)

Sir,

In the long and melancholy catalogue which of late, has been given of those distresses which peculiarly affect rural occupations, I have in vain sought for the enumeration of one, which though certainly of minor importance, yet, as it is of recent date, is peculiar in its cause, and is felt in its effects, in every cottage, it may not be undeserving of being recorded in your journal. This is the more desirable, because I do not find that a circumstance which may possibly lead to a change even in the moral condition of the poor, has yet been noticed in any publication whatever. In the counties of Norfolk, Suffolk, Cambridge, and Essex, it will be guessed that I allude to the spinning of wool, for the supply of our eastern manufactories. To those who take their station in the higher walks, and who knew but little of

> “ The short and simple annals of the poor,”

this great and important change may have passed by unnoticed; they will see the villager with her children in their field labours; they still find the poor widow at the common's gate, but they have not observed that she is divested of her ancient accompaniment, the distaff; nor is the privation of that, which found to all these a domestic employment, when that of the fields was finished, or suspended by bad weather, known beyond a small circle. You demand—what is the cause of this failure? Are our manufactories sunk into decay? In answer, no, though greatly diminished, they still hold on in hope of better days: but the privation of which the poor woman reasonably complains, has been occasioned by the inventive faculty of man. The art of drawing from the sheep's fleece a continuous length of thread, was of very early date in these eastern counties; its simple instruments were a yard of smooth hazle stick for a distaff, (or rock, as it is here[*] called) a small wooden spindle, and a leathern trip-skin, on which to whirl the spindle. In what estimation this sort of work was held in primæval ages, we may conclude from the eulogy upon it in the writings of Solomon, and from other passages in sacred scripture: it was valuable for being not only a sedentary, but an ambulatory employment; for the good woman, whose errand was from the squire to the parson of the parish, lost no time on her way, tripping her spindle, and perhaps, singing as she passed along. Nor is this custom confined to Great Britain alone: Mr. l'Eveque, in his “ Portuguese costume,” introduces a peasant, of the province of Minho, going to and returning from market, and thus describes her:—*Une quenouille chargee de filasse, pend a son cote; car les heures quelle doit passer sur la place du marche en attendant les acheteurs ne seront pas pour elle des heures d' oisivete et sortant de la ville l' econome villageoise regagnera son hameau en continuant de filer sa quenouille pour charmer les ennuis du chemin.*[†]”

The manifest advantages of such an employment are these—that it fills up what may be called the odds and ends of time, and can be taken up or laid aside with scarce a moment's preparation, when more profitable work is not to be done: that the light given out by the embers on the hearth is sufficient for the evening's work, and also, that by furnishing employment for the children of the cottage, not only are habits of industry imparted, but a disposition to an idle, rambling, and oftentimes a predatory kind of life is repressed. But some will say, "nothing is earned by spinning; what is sixpence a day?" I own it is but little, yet, in a family where three or four girls or boys can add the fruits of their labour to that of their mother, the good effects will be felt. The payment for this kind of labour, it is acknowledged, varies considerably with the fluctuations of trade; yet it may surprise some of your readers, Mr. Editor, to be informed, that for a long series of years, prior to the late important change, not less than one thousand guineas were every week carried out of the capital of Norfolk into that country, besides what was drawn from other of its towns, entirely for the payment of *spinning wages;* and in Suffolk, most probably more was disbursed. In a comparatively small and confined degree, this want of *spinning work* has been succeeded by the *platting of straw* for the manufacture of hats; but as this depends upon the light humour of fashion, much cannot be expected from it. Some traces of spinning, by means of the wheel, for the use of some of the more curious fabrics, yet remain; but the ingenuity of man, never at rest till it arrives at the highest step of perfection, after having compelled wheels and rollers to produce a thread of worsted yarn applicable to general purposes, and at least equal in quality to that which the finger alone had been supposed capable of producing, this same faculty is now endeavouring to rival, and even to excel, the most exquisite and delicate productions of the spinning wheel or distaff. Having already far exceeded all expectation, this last stretch of the inventive powers will probably for ever decide the fate both of the ancient distaff and the innovating wheel; and these will hang up in the roofs of our cottages, and small farm-houses, just to remind us that such things once *were in use.* Q.

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[*] In Norfolk.

[†] “ A distaff filled with flax hangs at her side, for she will not waste in idleness the time she must pass in the market while waiting for customers; on quitting the town, she turns to her cottage, spinning as she goes along to beguile the tediousness of the way.”

Daubenton—was a man very famous for his knowledge of Natural History. It was by him that Merino sheep were introduced into France, in order that they might not require the fine wool of Spain. He was the author of an excellent treatise on sheep, which was printed by the government for the author's benefit. The decree which was passed by the National Convention to this effect bears the following honorable testimony to his merit:—"Impoverished even by the means which he has used to enrich the arts and sciences, reduced by the revolution to a small income, Daubenton himself cannot afford the expense of a new impression of his work; but the interest of agriculture calls for it, and justice demands that it be turned to the profit of the author. It is worthy of a nation, who renders its protection to men of useful science, to enable them to receive the recompense of their labours through the channels of those labours themselves." The work is entitled "Instructions for Shepherds and Proprietors of Flocks." Some extracts from it were published by the *Dublin Society,* in the first vol. of their transactions. It is written in question and answer, for the instruction of shepherds. The intention of M. Daubenton being that the work should be distributed to the country schoolmasters of the sheep countries, to be read by their pupils, by which means the peasant would be instructed in the business of a shepherd from his early days, and a lasting impression made on his mind, as people seldom forget what they read at school.

A question has often been started, what quantity of food, either green or dry, is necessary for sheep. It is important that this question should be resolved, because otherwise the farmer would be unable to ascertain the proper quantity of stock to keep. The ideas of Daubenton are as follows—"I confined (says he) two sheep in a small space, about twenty inches high. By way of experiment I caused the sheep to be fed, during eight days, solely upon grass newly cut, and weighed before placed in their rack. Care was taken to pick up and place in it back again, all that the sheep let fall, and to weigh that which they could not eat, in consequence of its being too tough, or because it possessed some bad quality. From this trial frequently repeated, it appeared that a sheep of the middle stature eats about eight pounds of grass in a day. The same experiments, conducted with the same preciseness, in regard to hay or straw have proved, that a sheep of middling height likewise eats daily two pounds of hay, or 2½ pounds of straw.

In order to ascertain how many pounds of grass go to one pound of hay, I caused the grass to be weighed as soon as cut; it was then spread on cloths exposed to the sun, so that none might be lost though at the same time well dried. Being thus converted into hay, I found its weight reduced to ¼th; eight pounds of grass had only given two pounds of hay.

The regimen of sheep is one of the important branches of veterinary medicine. This science is only to be established by well founded experience, with observations and experience frequently repeated on these animals. An intimate acquaintance with them in their natural state, is necessary before attempting to cure their diseases.

LONDON SOCIETY OF ARTS.

The following Premiums have been adjudged, viz.—in *Agriculture*, to Philip Hurd, Esq. for raising oaks for timber, the large gold medal; Henry Blyth, Esq. for embanking 253 acres of marsh land from the sea; Messrs. Cowley and Staines, for cultivating 12 acres of poppies, and obtaining therefrom 196lb. of opium, 30 guineas. This opium was sold for 2s. per pound more than any of foreign growth which had been brought into the market.

In Chemistry.—To Mr. R. W. Dickson, for a machine for clearing beer while in fermentation, the large Silver Medal; to Mr. G. Chapman for a mode of consuming the smoke of steam-engine boilers, the large Silver Medal. *In Manufactures*, one department has been especially encouraged by the Society, and with success. The making of straw bonnets of English grass, in imitation of Leghorn ones. No less than 16 rewards were given to individuals, for specimens of this branch of manufacture. In the Polite Arts and in Mechanics, a variety of competitors appeared, and a number of rewards were distributed.

On the Management of Cauliflower Plants.

To produce a good supply during winter.

(BY MR. G. COCKBURN.)

I sow the seeds of the early cauliflowerin a south border, in the beginning of July, and as soon as the plants come up, I thin them out to 12 or 14 inches apart, where I suffer them to remain, keeping them clean and watering them occasionally, till about the middle of November, by which time they all produce heads from ten to thirty inches in circumference. As they are not hardy enough to bear more than three to four degrees of frost, I remove them at that time into a shed which will keep out ten degrees of frost, taking care to retain as much mould about their roots as possible, and to remove all their decayed leaves. In the shed they are planted in mould, keeping a space of about an inch between each head. In this state they are frequently looked over with care, their dead leaves removed, and those heads cut for present use which shew any disposition to decay. When severe frost occurs the plants are covered with dry short hay. By this management I have been able to send three dishes of cauliflowers to the table, every week during the autumn and winter, until February.

Another method is thus described by Mr. James Drummond. My pits, says he, are mostly made in a south and east border, in an inclosure which I have for hot beds, the fences of which afford good shelter from the cold quarters. To form the pits I make the ground as level as I can, and as firm as possible, by beating the soil when wet with a spade. The depth of the pit is according to the description of plants to be kept in them. Nine inches is sufficient for cauliflower plants, and for these care must be taken that a sufficient quantity of proper soil is left, or placed in the bottom of the pit in which they are to be pricked out.—Each pit of the above dimensions holds about 400 cauliflower plants. For plants in pots the depth of the pits must be proportioned to the height of the plants. The frames for covering these pits are twelve feet in length by six in breadth; I prefer them of that to a larger size, being easily removed. The timbers to form the sides and ends of the frames are required to be about three inches square, and quite straight. These when joined together are placed on a level floor, and slips of timber, two inches in breadth and one in thickness, are nailed lengthwise on them at intervals of nine inches. When the timber-work is finished, the straw is fastened on in layers in the manner of thatch, and tied to the bars by rope-yarn. —The straw used, is what is called in this country reed; it is prepared by taking the wheat in handfuls out of the sheaf, and beating it against a door, firmly fixed on edge; by this method of threshing, the straw is very little bruised. The frames are always kept under shelter in summer, being perfectly dried before they are put up, and with proper care will last for several years. When the plants are put into the pits the frames are laid over them. My method of giving air, is placing in the ground near the centre of each pit, a forked stick about four feet or more in length, strong enough to support the frames, when raised like the lid of a box to a sufficient height, and they remain in that position night and day, unless when actual freezing takes place, or when frost is expected in the night. I am far from thinking that these straw frames will bear a comparison with glass for neatness of appearance; but they have other advantages besides their cheapness—when they are raised, the plants in the pits have the full advantage of air and sun, and are but little exposed to wet, the rain being mostly thrown off on the backs of the frames, and when they are shut down frost cannot easily penetrate through them. It is well known that it is necessary to have mats, and other sorts of coverings over glass in severe weather, the removing of which, to give air in the middle of the day, and replacing at night, is attended with much trouble; whereas the opening and shutting of the straw frames is but the work of a moment. I had many geraniums and other tender plants which I could not find room for in the glass-houses. By way of experiment I placed them in these pits, and although from the unusual severity of the winter, I was obliged to keep down the frames night and day for a fortnight together, and cover them with additional straw to exclude the severe frost—the only plants that suffered were a few of the downy leaved geraniums, and even those on being planted afterwards in the ground, shot out vigorously in the spring at every joint. I have often tried to keep geraniums in hot-bed frames through the whole winter, but could never succeed if the weather was severe.—*Transactions of the Horticultural Society.*

For the following excellent observations we are indebted to that most respectable paper the Northern Whig:—

To the Editor of the Northern Whig.

Sir,—The present situation of Ireland presents to the observer one of those remarkable epochs in the history of nations and revolution of events, that can only occur to the same country at periods of time very far removed—a country possessing great natural advantages, after a long continuance of darkness, distraction, and misery, at once bursting into importance, arresting the most peculiar, and tender attention of her more powerful and prosperous sister—herself sensible of her former degradation, and ambitious to advance; her neighbours interested in her welfare, and willingly and zealously using every exertion to better her condition, by spreading information, increasing religious knowledge, and giving employment to her people.—Under such circumstances it is the duty of every person, according to his abilities and opportunity to help forward with the good work, or to endeavour to remove obstructions from impeding the progress of those who are more immediately concerned. With this view, I beg leave to present to the public, thro' the medium of your useful literary paper, some remarks on the prospect of the cotton trade spreading through Ireland, the advantages likely to accrue to the country from it, and the danger of combination in impeding its progress.

In my last I remarked, that the cotton trade had been partially carried on from Bandon to Derry, in order to shew our English and Scotch neighbours that workmen ready instructed were to be found over a vast extent of country; and I now add that from Bandon to Dundalk, there are no less than 14 towns, situated in 11 counties, where that description of cotton goods has been manufactured, that is more immediately adapted for the Manchester market. There is not one of those towns in the neighbourhood of which, unappropriated water-falls are not to be found, capable of driving spinning or bleaching machinery. Though this part of the country was formerly cursed by combinations, in all their frightful consequences, I am confident, that the experience of their destructive effects, added to the desire that is now felt by all classes of society, to increase the employment, by the introduction of foreign capital, would insure the best reception, the kindest treatment, and most ample protection to those who might extend their business to any part of this district. In the counties of Down and Antrim, and part of Derry and Armagh, the lighter fabrics of muslin, such as are made in Scotland, have long been manufactured to a considerable extent, where there are perhaps about 12 or 14,000 persons well instructed in weaving; and a better informed, or better disposed class of mechanics, perhaps never inhabited any country; they, in fact, unite, the intelligence and prudence of the Scotch (without their strong national prejudice) the manly independent spirit of the English, with the open, kind, grateful disposition of the Irish. It is needless to add, that persons carrying on trade among such a people, would be morally certain of being well and faithfully served.

These circumstances, which are certainly stated with the utmost fidelity, cannot be too generally, or too well known on the other side of the water, as they will shew them that though the cotton trade has in many parts of Ireland languished to decay, yet there are most ample means for its revival, and great encouragement for those who wish to fly from the widely extended, dangerous, and unprincipled combination of the workmen in England and Scotland. Moreover I can assure them that though delegates from Scotland paraded through this country, for the purpose of inducing the weavers to join in their wicked designs, that they met with very little encouragement. The great body of the weavers here are decidedly hostile to combinations, from the recollection they have of its former evil consequences. In fact there is not a man of any intelligence in the community, who does not see that the cause of the evils that long have afflicted, and still afflict Ireland, is the want of employment which can only be remedied by the introduction of capital; and capitalists must be well assured of the most ample protection, before they will venture to lay out their money in a strange country, however fair their prospect of profit.—It is likewise generally felt, that combination among workmen is among the most dreaded and destructive enemies of trade, and that every tongue, pen, and hand should be raised against its introduction. The weavers are beginning to calculate on the advantages of being employed at home, in place of roaming abroad, where they have been treated with both contempt and cruelty; they need only to be told that the increase of employers will produce a competition for workmen, and competition will inevitably produce the highest wages that the markets will bear.

Now, Sir, viewing the subject in this manner, I hope I am not too sanguine when I predict that very few years will pass, before English and Scotch employers will be established in every manufacturing town in Ireland, extending their branches through, and giving employment to people in, every part of the country, that there will be scarcely a water-fall of sufficient magnitude, that will not be employed in driving machinery: that Ireland, in place of exporting her sons and daughters, the bone and sinews of wealth, to fertilize and enrich other regions, will become a great exporter of manufactured goods, the product of their industry. That the wheat, the bacon, and butter, that have now to be sent away to answer the demands of our absentee landlords, will be consumed at home, consumed by an industrious people; and that in place of faction, idleness, and misery, industry, peace, comfort, and harmony, will reign from shore to shore.

A Friend to Free Trade.

(From the Irish Farmers' Journal.)

Sir—A few days ago, I met with, in your useful Journal, a letter signed John M'Cabe, land steward to the Rev. Archdeacon Butson, stating some facts highly discouraging to the use of mangel wurzel.

I respect any thing coming from the house of the Lord Bishop of Clonfert, not being a stranger to the agricultural zeal of that prelate, and having witnessed the strenuous efforts made by his lordship and his son, to reclaim a description of ground, with which so much of our Irish surface is covered and sterilized; I mean red or flow bog.

I feel a particular interest in this new acquisition to our vegetable stock, and look with some exultation at the rapid progress mangel wurzel is making in this country, when I consider that our wiser and graver neighbours required thirty years' consideration, before they would acknowledge the value of a root which Dr. Letsom so ably and stenuously pressed upon them for such a length of time.

I am also highly interested in favour of this root, from the channel through which I had received it. My noble countrywoman, the *Marchioness of Salisbury*, among other proofs of her agricultural acuteness, soon discovered the great value of mangel wurzel, and I believe was the principal means of rousing her slow neighbours into the acknowledgment of its utility. Her ladyship was so good as to commuicate to me all necessary information on the subject, and to supply me with seed for some years.

I was zealous in what I considered her ladyship's service, and having found an able coadjutor in the Bishop of Derry, saw with much pleasure, the culture of mangel wurzel spreading rapidly over Ireland.

I am sensible Mr. M'Cabe has the best intentions, when he cautions the world against the use of mangel wurzel or rather its leaves. But, as the house to which he belongs gives a weight to every thing that issues from it, I hope Mr. M'Cabe will forgive me for endeavouring to counteract the effect of his statement, and for requesting the agricultural world to pause, before they condemn a vegetable of high promise, from one calamitous fact, which probably may be accounted for otherwise than by assigning a deleterious quality to a plant hitherto deemed innocent.

The question is limited to the leaves of the mangel wurzel, nothing being said against the roots, and it is a pure question of fact—no theory, no reasoning *a priori*; a calamitous event is stated—no less than the sudden death of four valuable cows feeding on mangel wurzel leaves, and turnip tops. Whether the catastrophe was occasioned by a pernicious quality in the turnip leaf, the mangel wurzel leaf, or the mixture, remains to be determined, and the prudent farmer will probably abstain from an experiment, to be decided by so serious a risque.

Even if I had not claimed to be an instrument in the dissemination of this new acquisition to our vegetable stock, my steady and extensive use of mangel wurzel leaves for five or six years, would lay it as a duty upon me to state such facts as may probably prevent house-feeders being deterred from the use of the pure leaves; for as to mixture of them with other vegetables, I never tried them.

As I rarely settled at home (after the summer) before the beginning of October, the consumption of my leaves was begun rather late, but the consequence was, that the quantity of the food in question pressed on my cows through October was very great, without exciting in so many years, the slightest suspicion that it was in any respect unwholesome.

The interest I took in mangel wurzel induced me to make many experiments. The result seemed to be odd: I thought the leaves improved the milk more, while the effect of the root seemed more perceivable on the butter, but the melioration of both was so decided, and ascertained for years by so many respectable amateurs, that I must confess my respect for Mr. M'Cabe's opinion, and report on the subject of mangel wurzel is much weakened by his assertion—"That his milch cows declined both in quantity and quality of their milk, though plentifully supplied with leaves," a position to which my uninterrupted experience for six years, gives the most unqualified contradiction.

I apprehend my Lord Bishop of Derry can give a very decided testimony on this question, and I think likewise, he will not be disposed to withhold it. I paid his lordship visits in September 1812 and 1813, in the high consumption of his mangel wurzel leaves, and found him amusing himself in ascertaining the amount of their produce, which was immense, and the quantity his cows consumed prodigious, yet we did not hear one word of ill effects, and I know his lordship perseveres in their use.

In October, I have many visitors, curious to see my fiorin crops, when in their highest luxuriance, and this year I expected some member of the *Irish Farming Society*, deputed to inspect the crop I was to exhibit as a candidate for their premiums.

Wishing also to shew off another favourite to the best advantage, I ordered two cows to be fed exclusively on mangel wurzel leaves, and not to be suffered on any account to leave their stall, or to taste water for ten days; their milk was delicious, and admired by all who tasted it. At length the severe weather interrupted my supply, and these cows were sent to the same field with the others; but the moment I read Mr. M'Cabe's letter, I went to examine them, and found them in good healthy condition; I ordered them back to their leaves and confinement, undismayed by his alarming report.

I conceive this fact to be more decisive than the calamitous report of Mr. M'Cabe; for unknown circumstances, as well as the mixture, may have operated in his case, while in mine, had the leaves contained any thing deleterious it must have operated in ten days while they were the exclusive food of my cows.

My dairy maid's testimony, too, is strong in favour of the leaves, for when I questioned her on the subject, she replied she was always proud when she saw the mangels coming, they so much improved the milk, both in quantity and quality. I am Sir, yours, &c.

W. Richardson, D. D.

Account of Premiums given by the Linen Board.

Oct. 20—	W. Thompson, Killea, 1st Premium,	£2	10	0
	John Lithgow, Glendermot, 2d do.	2	0	0
	A. Smyth and A. M'Clintock, 4th and 5th do.—Each	1	0	0
Oct. 27—	First and second Premiums withheld for want of merit.			
	William Hutchison, Taughboyne, 3d Premium	1	10	0
	Robort Colhoun and Samuel Moore, 4th and 5th do.—Each	1	0	0
Nov. 3—	William Osborne, Killea, 1st premium	2	10	0
	Andrew Thompson, Allsaints, 2d do.	2	0	0
	Robert Mills, Templemore, 3d do.	1	10	0
	Henry M'Cay, Allsaints, 4th do.	1	0	0
	Robert M'Elhenny, Convoy, 5th do.	1	0	0
10*—	E. Bradin, Templemore, 1st premium	2	10	0
	William Latta, Taughboyne, 2d do.	2	0	0
	James Boggs, Killea, 3d do.	1	10	0
	Alex. Noble, W. Thompson—Each	1	0	0
17—	John Douglas, Glendermot,	2	10	0
	The other Premiums withheld for want of merit.			

* On the 10th several specimens of very great merit appeared. On the 17th, there was a grievous falling off.

GOOD SALT.

A difference in point of quality, greater than is generally imagined, exists between salt recently manufactured, and salt which has undergone depuration, and been well drained from the brine and bittern. Recent salt is not well adapted for preserving meat, or the uses of the table; it imparts to meats a bad taste, vitiates their colour, and prevents them of acquiring that firmness which is essential to their preservation. It is moreover subject to great waste during its conveyance to any distance, as it dissolves in a moist-air, and runs into a liquid state. Salt which is of a good age may be distinguished from recent salt, by a taste penetrating, yet free from bitterness; by the solidity of its fabric, and by its not meltiug when exposed to a moist atmosphere.

CURRENT PRICES IN DERRY.

Oatmeal	...	11	6	*to*	12	3	*pr cwt.*
Oats	...	0	7	–	0	9	*pr st.*
Barley	...	0	8	–	0	10	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3½	–	0	5	*pr lb.*
Mutton	...	0	3⅓	–	0	4	
Veal	...	0	5	–	0	7	
Butter	...	0	9	–	0	10	*pr18oz*
Flax uudressed		35	0	–	56	0	*pr cwt.*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton.

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The subjects introduced in the following letter are worthy of serious consideration—they are also treated in such a manner as must be gratifying to the lovers of truth, and to the friends of our common country. Some of the topics, as for instance that of the Agricultural Seminary, are of such a nature as to give rise to various opinions, but the very intention of such a paper as ours is, to afford an arena for free discussion. To what champion the palm of victory may be awarded, is of small importance, if only some sparks of truth be struck out. We are happy to hear of the meritorious doings of Sir James Galbraith—such lights should not be hidden unber a bushel—they should be held up to the general view, so that their beneficial influence may be diffused over the whole surrounding country.

To the Editor of the North West Magazine.

Sir—If you think the following subject worth a place in your Magazine, I beg you will give it publicity:—

It must be highly gratifying to the philosophic mind, to observe the dawning rays of improvement that are making their appearance in Ireland—I trust that perseverance will increase the patriotic spirit, and rouse to exertion the dormant sense of the Irish farmer to the improvement of his farm, and unite in good fellowship the hearts of Irishmen. Too much praise cannot be given to the chief members of the N. W. Farming Society, whose laudable zeal for the promotion of industry, and practical knowledge in husbandry is making a slow but pleasing progress; yet in my mind, the grand object would be sooner established by a few alterations in the present system, and a more vigorous attack on the cause of the common evil—want of employment. Idleness is the parent of want, and want is the source of machination. For the discussion and consideration of the Society, I give my opinion of what appears to me best to suit the local circumstances of this country. Now, Sir, let me take a view of the general state of Ireland, and to do so, I will assimilate it to an uncultivated farm, badly enclosed, and consequently in great need of draining; then let me ask, what should be the first step taken towards improving it. The answer is obvious—it should be first enclosed and drained. Potatoes, at present, are the most material crop in Ireland, they are principally the poor man's food, and, taken in a proper view, generally the most profitable crop: their cultivation is a good method of improving barren land, and experience has convinced me, after twenty years' observation, that the farmer who exerts himself for potatoes, has much less difficulty in paying his rent than his neighbour who is less anxious; it is a proverb with the labourer, "work for potatoes and other crops will follow." I will readily admit that turnips are a good crop to those who can turn them to the best advantage, but to the generality of our farmers, they would not be profitable. What would a farmer do with an acre of turnips who occupies only twenty acres of land, and who can scarcely scrape up so much manure as will give him a sufficient quantity of potatoes for his own use? What argument can prove, he should sow turnips? It may be probable, that an individual at present would find an advantage in a certain quantity of them, whose land is in a prepared state, and who may have a stock of cattle to feed, and to make manure for them; but our farmers are generally poor, and very often obliged to drive to market the very provisions they should keep for the sustenance of their families; and probably the one-half of their stock of cattle in a very unprepared state for sale, to make money for the payment of their rents. In this case what good would an acre of turnips do such people?—they could not wait to fatten their cows. It is true, an acre of potatoes would be a surer article to make money of; but if there were as many cart loads of turnips in our markets for sale as there are of potatoes, what would be their value? The case is not here as in either England or Scotland—a farmer there is not obliged to send to market the only article he has for sale, at a time when there is no demand for it; he has different articles to make money of—his farm is large, he is, therefore, able to keep stock; it affords him more than he can consume in his family, and at any rent-term, he can send to market the article most in demand; he can keep his cows or his sheep until they are fat, and when he has either ready for market, he gets a good price, by reason of the great consumption in England and Scotland for fleshmeat. If our markets were as well stored with fleshmeat, it would become a mere drug for want of purchasers. Potatoes, and not fleshmeat, are the food of the Irish poor, and will always remain so as long as land proprietors let their lands in the small divisions they do. The very people that now occupy from four to twelve acres of land, would be better as day labourers on an extensive farm. If the premiums that are given for turnips, clover, ploughing matches, and show of cattle, were shared with fencing, draining, liming, and growing potatoes, I will venture to say, it would produce a gratifying effect, and draw members to the Society. Clover, undoubtedly, is of first rate importance, if the land be well prepared by fencing and draining.

To add members to the Society, I would recommend a meeting in each parish, where none but the practical farmers should attend to discuss, in their own homely way, necessary subjects, and make their free, undaunted observations, and their opinions to be laid before the Branch Meetings, to be decided on. There is many a farmer, who is conscious of his own inability in public speaking, or even expressing his meaning in a manner to please the ear of learned gentlemen, and for this reason will not become a member of the Society, because he cannot urge his reasons by argument in presence of those whom he is ashamed to contradict: I know that many an honest, plain, and yet experienced farmer would attend such a meeting, who would be ashamed to assemble with, or even speak in presence of gentlemen.

If landlords would practise what has been done by Sir James Galbraith, on his Castlefin estate this year, where many acres of valuable land were greatly exposed to the floods of the river Finn, they would soon be convinced of much real good arising therefrom to themselves and their tenants. That gentleman drained and embanked (I dare say) two hundred acres, employed a proper person to execute the work, and to keep an accurate account of the expenditure; and then laid on each tenant according to the portion of land he held, a share of the expense, to be paid yearly; and although the labour was performed by the occupiers of the land, they received weekly wages for themselves, their sons, and their servants. All landlords, where their tenants have improvable land, and are not in circumstances to improve it themselves, should follow the example.

Our absentee landlords are, in a great measure, the cause of our evils. Would to God that our country were the exclusive property of Irishmen, and that they would stay at home, and assist the talents and the worth of those we have, employ their wealth in establishing commerce, trade, and manufactures, and watch, with fatherly eyes, the wants and the prosperity of their countrymen! Ireland would soon vie with the sister kingdom.—Look at the manufactories and the public works that are carried on in England and Scotland, how they are employed—then turn your view to Ireland, how miserable the contrast—a set of idle, half-starved, miserable beings; some claiming the name of farmers, actually not able to eat, drink, or wear, as a day labourer does in either England or Scotland, all for want of manufactories and trades to employ those who loiter, and spend the one half of their time and that of their families on a few acres of land, insufficient to produce sufficient food for them.

I do admire the patriotic zeal evinced by Mr. Sinclair, at the last October Meeting of the Society in Derry, nor can I less applaud the congenial mind of all the members of that Society, but I am doubtful, that the Seminary that is about to be established at Grocers' Hall, will not, in the present state of Ireland, (without more operative measures,) be productive of so much good as is anticipated from it; yet I trust, that the same spirit which prompted those gentlemen to subscribe to it, will prompt them to subscribe shares of £1000 each (or more) to establish manufactories in this neighbourhood. Ireland abounds with mines of different sorts

—will they raise a fund to commence working them? I hope they will not leave it to Englishmen, to come to our very doors, and carry away what would enrich us. The county of Donegal abounds with lead mines, and I know that a company of Englishmen have expended a considerable sum in examining on the Marquis of Conyngham's estate, in Boylagh, a lead mine, and I understand they have made (or do intend to make) proposals to the Marquis for it. How would mines and manufactories wrought by our own people enrich us! Let us, when we think it necessary to establish Seminaries, prepare employment for those we mean to instruct. Suppose we have engineers, agriculturalists, botanists, artists, &c. all ready for employment, where are they to find it—now would be the season to think of that, and keep at home our " Paddy Hutchison."

Let us immediately set about to establish manufactories, and we will soon see the half-starved wretches, who now spend the one half of their time idly, the other half in working a few acres of land, leave their abodes of misery and approach to the seats of industry. Then our farms may be enlarged, and those very people will come to our markets and purchase, with ready money, the necessaries they could never before enjoy. Money will become plenty, Ireland will prosper, and contentment, with all her blessings, will cheer and animate us.—I am Sir, &c.

A. D.

RAIL-WAYS.

Mr. Sandars, of Liverpool, has published a letter on this subject, addressed to the members of Parliament, and to the merchants and others interested in the trade between Manchester and Liverpool. As the public attention in this part of the world has been a good deal excited relative to this subject, a few extracts may not be unacceptable.

The writer commences in the following terms:—" My Lords and Gentlemen—At a period when the profits of trade, commerce, and manufactures are almost entirely dependant on economy, the enormous charge for the freight of goods between this port and Manchester is become quite insufferable, and its reduction so intimately connected with the general prosperity of the country, that I do not deem any apology necessary for drawing your attention to the subject."

The point which the writer wishes to advocate is the expediency of supporting a rail way between Liverpool and Manchester.—With this view he goes on to shew the methods by which the Duke of Bridgewater exacts 5s. 2d. per ton on all goods that are navigated on his line, although it is perfectly clear that the legislature never intended that he should have more than 2s. 6d.—By monopolizing the land and warehouses on the banks of the canal, the trustees of the Duke, are, it seems, enabled to impose very severe exactions, which under present circumstances the public cannot well resist. At the present moment they charge 5s. per ton freight on grain, while bye-carriers in abundance would be found to contract at 2s.—But if a bye-carrier arrive, the owner of the goods who thought to save a few shillings a ton, finds that he has not only to pay the 2s. but also the 5s.—for, say the Trustees, what will you do with the goods? ours are the only warehouses, and your goods shall not be landed without paying as much as if we had carried them ourselves. Pay us the 5s. and your goods shall be received and forwarded.

From a statement given by this writer, it appears that at present the freight for heavy goods is 12s. 6d. per ton, and for light 15s. —that in 1810, freights were nearly three times what they were in 1795. It is computed that nearly 1000 tons of goods pass daily between Manchester and Liverpool; but call it 600 only, and reckon the average freight at 14s. the daily amount will be £420, so that £210 per day is paid in addition to what was paid in 1795, or the enormous sum of £65,520 per annum! This immense revenue is raised from the merchants and manufacturers, and for no other purpose than to enrich a few individuals, originally forty in number, who are daily violating acts of Parliament.

The only remedy the public has left is to go before Parliament, and ask for permission to establish a new line of conveyance. The necessity of this is made to appear, not only on account of the extravagant charges of the canal companies, but from the fact that the present means of conveyance are inadequate.

We now come to that part of the letter which will perhaps appear most interesting to our readers, viz. where the writer describes the intrinsic advantages of a rail-road over a canal.

It is computed that goods could be carried much cheaper, and in one-sixth of the time. Canals in summer are often short of water, and in winter are obstructed by frost; a railway would not have to encounter these impediments. The goods, by a rail way, are not exposed to the risk of the voyage by water, and this is no trivial consideration.—Manufacturers are little aware of the risks they run. It is notorious that goods coming down the canals and rivers frequently receive damage; but the packages are polished up in Liverpool previous to shipment, and pass inspection. On being opened in a foreign market the secret is discovered, and an average is the result.

It is well known to commercial men that great difficulty has been found in getting vessels to convey goods to Manchester. Timber has frequently been detained in Liverpool, on this account, a month, and corn and other commodities eight or ten days. This is a serious evil, for men will not resort to a market from whence they have such difficulty in getting their goods. *This would be removed by a rail way.* Vessels are too expensive to be built and kept in repair to answer any sudden press of business, for they would receive more injury in slack times, when laid up than when employed; but a few hundred waggons kept under cover, would at all times be in readiness to act at a moment's notice, and the expense would be comparatively trifling.

A rail way would bring down the price of coals in Liverpool several shillings per ton. It would open all the collieries on the line to the sea.

The passage by the Canals is on an average thirty hours, and the delays are sometimes such, that dealers are obliged to cart cotton a distance of thirty-six miles, which costs them four times the price which would be charged by a Railroad, and they are three times as long of getting it to hand. Land carriage at an enormous sacrifice is preferred for two reasons—sometimes because water-carriage cannot be promptly obtained, but more frequently because speed and certainty as to delivery are of the first importance.—Packages for immediate shipment sent from Manchester, often pay two or three pounds per ton—yet there are those who assert that a difference of a few hours in speed can be no object. The merchants know better.

A Raid-road will enable passengers to travel between Manchester and Liverpool, at the rate of ten or twelve miles per hour, at one-half the present fare.

As to the landed proprietors there is not one of them who will not be immediately benefited by the Railway passing upon, or within a mile or two of their ground, it will open the estate for the sale of its produce in either the Liverpool or Manchester market. Time and distance are convertible terms; if by opening better roads, and providing a quicker conveyance, 36 miles are performed in the same time that 18 were, every farmer within that distance will find his condition greatly benefited. The Railway will enable him to fertilize his land with the lime-stone of Wales and Derbyshire, at a considerable reduction of price; and to obtain manure from the large towns much cheaper than at present.

It is not likely that such a measure will pass without opposition. Turnpike roads were proposed to be extended, the plan was opposed—nevertheless turnpike roads have multiplied. When in 1765 Canals were projected, numerous pamphlets were published to shew their danger and impolicy. The turnpike trustees and the owners of Pack horses saw danger, and they made the landed proprietors believe that canals would supersede the use of horses, and thereby diminish the consumption of hay and oats. The parties joined, and by their representation, that internal navigation would destroy the coasting trade, and the nursery for seamen, prevented for a year or two several important undertakings, and among the rest, the Kent and Mersey Navigation. What has been the effect of Canals? they have increased trade, commerce, and manufactures, *they have increased turnpike roads, they have increased* *the number of horses, and the growth of hay and corn*, they have increased both the coasting trade, and the number of seamen. Canals have done well for the country, just as high roads, and pack horses had done before canals were established; but the country has now presented to it, in this instance, a cheaper and more expeditious mode of conveyance. The Steam Engine has raised the productive powers of this country, to an extent which even to ourselves seems wonderful, but which our ancestors would have regarded as the idle dream of some visionary. It enabled us to carry on the war, and it will be the chief means of paying off our debts. Till lately its powers have been confined to manufactories and other stationary employments—but now they are employed in navigation, and steam-boats have superseded all the coasting packets in the kingdom—the public reap the benefit. It has been ascertained that its powers may now be applied to the propelling or dragging of goods and passengers on a Railroad, and this too at a cheaper, safer, and much more expeditious rate than before.—Were the opposition to such a measure successful, a severe blow would be struck at our boasted superiority in commerce and manufactures; for the rest of the world will adopt Railroads, and embrace the full benefit of the discovery. The Emperor of Rusia has obtained a model of the Locomotive Engine, and at the present moment he has a professional agent investigating the Railroads of the North. The Americans too are alive to the subject, and at the seat of Government it is undergoing discussion.

Those who consider the measure as one of local interest, take a very erroneous view of it. To Ireland as presenting a much cheaper and more expeditious conveyance of its agricultural products to the great manufacturing districts, it is of the utmost importance, for every reduction is a direct bonus to that country. To Ireland such a measure is indispensable, now that by the late extension of the Ayr and Calder navigation,* vessels of 200 tons can come nearly to Leeds and Wakefield with the corn, the flax, and the butter of the Continent, and of course at much less expense than heretofore. Before long we shall see Dutch butter introduced into Lancashire by this navigation, and nothing can keep it out but a reduction of freight on Irish between Liverpool and Manchester. Besides the passage from Manchester to Dublin will be reduced to sixteen or eighteen hours.—The cheap labour of Ireland will be put in requisition by our manufacturers. During the last two years, a transit of goods has been taking place for this purpose, and it is rapidly increasing. There is nothing wanted but the Railroad, to ensure to the Irish peasantry a considerable share of employment from this source.

Philips, in his History of Inland Navigation, states, that the canals of China, by far the most extensive in the world, are cut thro' any kind of property, gardens, plantations, or pleasure grounds, not even the gardens of the Emperor, or any of his governors, are exempted; but when the work arrives at the garden or pleasure ground, the governor or even the Emperor himself digs the first spade of earth, and pronounces, with an audible voice—" This is to let those of inferior stations know that no private pleasure shall obstruct the public good."

If their Celestial Majesties arrived at this point of true wisdom some centuries ago, it only proves that knowledge travels from east to west more slowly than might have been expected, and that the enlightened opinions of Mr. Ricardo and Mr. Huskisson possess less originality than has been claimed for them —If the gentlemen and noblemen on my line should oppose any objections, I would beg to quote the words of Philips, who says " that the good of a part must always give way to the good of the whole, when they happen to interfere, is one of the most essential principles of civil association; but it is at all times reasonable that the great interest of the community, should be pursued and supported with as little injury to individuals as possible. I would defer to my Lord Derby, my Lord Sefton, or to Lord Stanley, on all points affecting their substantial comforts and convenience, but I am convinced they are too liberal and patriotic to urge frivolous or fanciful objections.—It may be very pleasant for noblemen to exclude from the precincts of their domains, the industrious classes of society—they may derive a morning's entertainment from visiting a manufacturing or sea-port town, as they would from a view on the lakes, or from inspecting a community of bees in a glass hive, but these feelings, and these times, are fast wearing away—there is a feeling of mutual good, and of mutual dependance, before which both aristocratic and democratic tendencies subside to their just and healthful level. Where the general good is concerned, society knows nothing of privileged classes.—There is no man now, who would wield his rich inheritance against the comfort and the necessities of the community, in which he lives and moves, and has his being.

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* On this line the tonnage on heavy goods is 4s. 8d. but for Irish provisions they charge 7s. per ton!!

Parliament is too discreet to suffer narrow views of policy to predominate. It is now fully sensible of the injurious effects of restrictions and monopolies, and of the importance of a free and cheap trade both at home and abroad—it has encouraged improvements of all descriptions—it has preferred the interest of the many, to the advantage of the few, and it will without doubt extend its protection to this projected undertaking.

The country requires the aid of this and of every other improvement which can be suggested—it is loaded with an immense debt—it is heavily taxed, and Ireland is sur-charged with a population of several millions, existing in a state of misery unknown to any other people in the world.

Economy in time and expense, the adoption of new machinery, and industry, and talent, will doubtless enable us to triumph over all these difficulties, and to place a population now fit for treason or for spoil, in a state of comfort and content. Such powers applied to our inexhaustible, but hitherto imperfectly developed mineral treasures, to our trade, commerce, and agriculture, cannot fail to elevate this nation still higher in the scale of wealth and importance, and to shew the world that she is not less dominant in peace than she was powerful and irresistible in war.

T. SANDARS.

French improvement in the Loom.—The new French system of weaving all kinds of figured goods without draw-boys, by a single adjunction to a common loom, merits the attention of manufacturers. The artist can change the figures from one flower to another in fifteen minutes—and can produce twenty different patterns in as many yards of cloth; the whole is worked by one single tredle only, as well in large shawls as in narrow goods.

BREAD AND POTATOES.

(From the Mechanics' Magazine.)

I shall feel greatly obliged to any of your correspondents who will furnish me with a description of the mill used for grinding potatoes for the baker, or who will inform me where I can procure it. I am fully convinced by trial, that potatoes tend to make bread lighter than wheat-flour can do, and chemical analysis shows bread so made to be wholesome and nutritious. It will perhaps, excite surprise that I should recommend a practice for which bakers are generally condemned, and held up as a body of men who pick our pockets and feed us with poison; but if they confined the mysterious part of their science to the introduction of potatoes, we need be under no apprehension about the latter, though there might be some difficulty in acquitting them of the former, because bread is made at less expense with an admixture of potatoes than with flour alone; but who would deal with the baker who should advertise cheap bread, composed of flour and potatoes? Prejudice, invincible prejudice, would be his ruin.[*] The people must have pure wheaten bread and so white to boot, that it is impossible it can be pure. The baker is thus compelled, *nolens volens*, to have recourse to deception, and to plunge his thumbs into as strange a composition of ingredients, as that into which the pilot's thumb was introduced by the weird sisters of Shakespeare, and with a somewhat similar effect—a train of ghostly loaves are *raised*, and the customers are satisfied.

I wish to take this opportunity of correcting a mis-statement in "Cobbett's Cottage Economy," respecting the comparative merits of wheat and potatoes, to the latter of which he appears to entertain as rooted an antipathy as if all *pommes de terre* (potatoes) were *grands hommes de terre* (great men of the earth).—Let him rail against *potentates* if he will, but let him not libel *potatoes*, in such a way as to assert, as an *established fact*, "*that they contain only one tenth of their weight of nutritive* matter;" whereas it has been ascertained by

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[*] If so, Mr. M. Shaw, our fellow-citizen, is in danger—he has boldly encountered the prejudice, and braves all consequences—Ed.

Sir H. Davy, and other chemists, that one quarter of their weight is nutritive. The quantity of nutritive matter, thus calculated in an acre of potatoes, so far from being as Cobbett attempts to prove, much less than that in an acre of wheat, is more than double. I will meet him on his own ground, an acre of which he states will produce 32 bushels of wheat, or 300 bushels of potatoes; now 32 bushels of wheat weigh 1920lbs. and 300 bushels of potatoes weigh 16,800lbs. one quarter of which viz. 4200lbs is nutritive, making a balance of 2280lbs. in favour of the potatoes. The parings are not deducted, but neither is the bran, the weight of which 10lbs. in every 60, or in every bushel, which will at least, equal the loss in paring the potatoes.—I am Sir, your humble servant,

PHILO-MURPHY.

PLANTING.

(From the Irish Farmers' Journal.)

Sir—In looking into your useful journal, I expected to have found something satisfactory on the subject of planting and rearing forest timber, but as I did not obtain the information I wished for, I supposed it might be owing to the search I had made not being sufficiently minute, and I would therefore humbly suggest to the editor of this valuable paper, the advantage of making a copious index at the end of this present volume. Having glanced at Walter Nicol's Treatise on Forest Planting, I obtained all the information I wished for, but as this book and some others which I looked into, may not be in every one's hands who reads your paper, I shall transmit you the substance of my inquiries.

Planting being designed either for artificial shelter, ornament, or profit, it is of importance to know the trees best adapted to the various soils, also the proper age and size of the different kinds, and the best manner of planting them.

Loamy soils, generally speaking, are the best for timber of all kinds, and an irony till, of little depth, on a retentive subsoil, as it upholds a poisonous water, is the worst. The alder thrives best in a spongy soil—the ash arrives at perfection on all soils except a stiff clay with a retentive bottom—the mountain ash, or sarb, arrives at its highest perfection on light sandy and elevated situations, and the beech on deep sandy loams, although on almost any kind of soil it becomes a graceful tree. The birch, the Spanish and horse-chesnut, flourish in many different soils, but most in a deep loam with a dry bottom. The Scotch elm, which is a valuable tree, and gives place only to the oak, will suit itself to any soil and any situation, and so will the larch luxuriate, excepting on land of a humid and retentive nature. The lime tree requires a humid loam, also the plane tree (platanus) and all the different species of poplars and willows. In barren and exposed situations the horn beam is valuable, although inferior to most of the other kinds of timber—the laburnum thrives best in an open soil, so also does the sycamore and walnut—the oak, the most valuable of all timber, arrives at greatest perfection on a deep loam lying on a gravelly or rocky substratum; in moist situations it will also luxuriate, while young, and even on a tilly clay, but in such soils it is subject to premature and early decay.

MANGEL WURZEL, &c.

(From the Irish Farmers' Journal.)

Sir—I have lately read some essays in your paper, respecting Mangel Murzel. A gentleman's steward states that the leaves of mangel wurzel seemed to affect two or three cows under his care, so as to have caused their death, and that he considers the leaves, if given with turnip tops or other green food, as dangerous to cows. I keep four cows on a small pasture, and it would not be in my power to support them, if I did not provide green feeding. I have fed them for three years past on mangel wurzel, from the beginning of October to April, allowing them sometimes to take turnip tops, rape or grass, and they have been not only in good condition, but have milked remarkably well. In the three years I have changed some of the cows, and I never heard of any of them being sick for one hour.

In the beginning of October I begin to pull off the leaves of mangel wurzel, and I have the cows then put into the house every night, giving them a quantity of fresh leaves every evening, and some more every morning before they are put out to the field.—

When the leaves are all consumed, I begin with the roots, which I preserve in pits, or lay carefully in a house with straw between each layer, taking care that they are put up in a dry state and free from cuts or bruises.

Before they are given to the cows, the roots are put into a trough under a pump, and with a stick or broom, stirred and washed clean, then sliced with a large knife, and taken to the cattle.

I have had a sufficient supply of this excellent food for my cows, till the latter end of April, for three years past.

I wish the sowing of mangel wurzel was more general in Ireland than it has been.—If introduced into the cottager's garden, it would become most valuable, for it is well known that the poor man's cow sometimes falls a victim to hunger in the severity of winter, when it is without hay, and the owner without the means of purchasing a load.—If gentlemen would distribute a small quantity of mangel wurzel seed among their cottagers, (a quarter of a pound to each) and persuade them to sow it in their gardens, their cows would be preserved in health and strength during the winter, and they would yield the families a quantity and quality of milk hitherto unknown to them. Mangel wurzel would save the poor man's potatoes, as the leaves or roots will be taken by pigs in preference to almost any other food.

I have about eleven acres of land, eight acres of which are well manured and laid down. My stock consists of two horses, four cows, and seldom less than twenty sheep.—This small farm feeds my cattle, gives me great plenty of hay and potatoes, and I have sometimes a few barrels of oats for my horses. My stock is always in good condition, and my cows milk very well. I have about an acre of early vetches every year, which produces two crops, beginning to cut a good crop early in May, and being able to come back for a second good crop off the same ground, the beginning or middle of August. I feed my horses on vetches during the summer, with a little hay at night, by which I get a quantity of manure; and I have about an acre of mangel wurzel, and rape or turnips for my cows during the winter.

Before I provided green feeding, I never was able to keep near the same stock I have at present, and I was sometimes in want of food. My cows get as much vetches as they will take when put in to milk, morning and evening, in summer, and the quantity of hay consumed by them during the winter, is very trifling.

I have had your valuable journal from its commencement, and though the times are very bad with farmers, I must continue a subscriber. I have had much information from it—indeed it has repaid me the amount of my subscription amply. I have had much amusement in reading some of your original scraps, and my wife and children have received no small advantage and pleasure from your Sunday Readings, and moral essays,—Allow me to wish the Irish Farmer's Journal the success such a publication merits, and to subscribe myself, A CONSTANT READER.

CURRENT PRICES IN DERRY.

Oatmeal ...	12	0	*to*	13	6	*pr cwt.*
Oats ...	0	9	–	0	10	*pr st.*
Barley ...	0	12	–	0	13	
Potatoes ...	0	2	–	0	2½	
Beef ...	0	3½	–	0	5	*pr lb.*
Mutton ...	0	3½	–	0	4	
Veal ...	0	5	–	0	7	
Butter ...	0	9	–	0	10	*pr 18oz*
Firkin Butter, 1st	99	0	–	100	0	*pr cwt.*
Do. 2d	93	0	–	94	0	
Do. 3d	83	0	–	85	0	
Flax uudressed	37	0	–	54	0	*pr cwt.*
Five hank yarn	2	9	–	3	4	*pr spl*
Four do. do.	2	7	–	2	10	
Three do. do.	2	8	–	2	11	
One do. do.	2	6	–	2	8	
Hides ...	37	0	–	54	0	*pr cwt.*

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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PLANTING.

(Continued from page 15)

Having said thus much as to the deciduous kinds of forest trees, and soils best adapted to their growth, let us next consider what soils are best fitted for the evergreen or resinous kinds: like those already mentioned, they flourish most exuberantly on deep and sandy loam, or soils that will not retain stagnant water. The cedar of Lebanon will grow on all soils and in all situations, excepting those of a very moist and retentive nature. This tree frequently arrives at a mighty stature, and independent of its beauty, its timber has the peculiar property of resisting worms, admits of a high polish, and retains a most agreeable smell for ages. The Weymouth pine, the common and the American spruce, and silver fir, all prefer sandy loams, although they will make progress on moist lands, and even in pretty strong clay, if it be supported by an open substratum. The Scotch pine or Scotch fir, arrives at highest perfection on mountains and bleak situations; on tilly and retentive clays, it becomes stunted in twenty or thirty years, nor ought it to be planted in rich and sheltered situations unless for nursing other trees, as its timber there is much inferior in quality to that which is produced on the mountains.

In procuring the plants, it is universally acknowledged that it is by no means profitable to raise them from the seed, although a vast saving is to be obtained in nursing seedlings. As to the age and size of the plants, much must necessarily depend on the soil and situation for which they are intended. When the plants are too large, unnecessary expense is thereby incurred, and it is quite certain, that in most situations, young plants will outgrow the old in the space of seven years.

As to the distance at which the trees should be planted, this also must in a great measure depend on the soil and situation, together with the breadth and extent of the plantation. If the situation be much exposed, and the soil poor, the plants will require to be no more than two feet distant, which is allowing about eleven thousand to the Scotch acre; but in more sheltered grounds and better soil, three feet distance will be sufficient (or between six and seven thousand per acre) and in land of the best quality, four or five feet apart will be a proper medium; in belts or clumps of an hundred feet diameter on thin soil, the margin on all sides should be planted at not more than two feet distant; in narrow stripes also, the plants should be thicker throughout, than in a more extended plantation, and in all cases where the plants are large, they ought to be thicker than when they are of little size, because three of the large plants commonly fall for one of the smaller; promiscuous irregular planting is generally preferred, except when it is intended to cross for some years with vegetables in the plantation.

In regard to the mixture of trees, this will greatly depend on the fancy of the planter.—When the soil is good and it is intended to give the preference to the oak, it has been recommended to plant two oaks for one elm, two elms for one beech, two beeches for one ash, two ashes for one birch, and two birches for one sycamore. Some proprietors plant in groups, and in this case, the trees are kept in distinct classes. In deep loamy earth they plant the oak, the elm, the ash, the chesnut and walnut—on sandy and gravelly soils, they plant the mountain ash, the beech, the larch, the sycamore and hornbeam—on poorer and mixt soils, they plant the pine tribes—on moist grounds, they class together the aquatics, such as the alder, poplar, and willow, and the sub-aquatics, such as the birch, the lime, and the American plane.—As nurses in the forest, the larch is now preferred to the native pine, as it surpasses it in growth in every situation.

In some situations copse wood is more profitable than timber of any kind, on account of the value of the bark chiefly; in this case, oaks are planted at nine feet distant, and are nursed by larch and common fir till sixteen or twenty years of age, when the whole is cut over, and in a few years there arises a beautiful and profitable copse of wood.

With respect to the proper season of planting, the most eligible is, the beginning of November to the end of March, but this may vary a little according as the season is wet or dry, early or late. Indeed from the 20th July to the end of August, is reckoned the best season for planting many of the resinous tribes, such as the cedar, Weymouth pine, the Scotch and silver firs, and the spruce, if the weather at any time be cloudy and wet, but they will also succeed if planted towards the end of April, should the season prove moist.

Respecting the method of planting, some prepare the ground by the plough and harrow, and others by the spade. Pitting trees is now generally exploded, but may nevertheless be practised successfully, when the pits are properly prepared. In all cases in which this method is practised, the pits should be opened to a proper depth, six months previous to planting, and the turf being then rotten is shaped in the bottom of the pit, and the finest mould is carefully placed on the fibres of the plant, and pressed down with the feet. But the most common mode of planting, is by stit, or the letter T. A still better method is to strike the spade at random to the depth of the turf, and then strike it crossways at the end of this incision, and at right angles with it, the boy then places the root of the plant on the plate of the spade, and draws it gently into the opening, and when the spade is drawn out he treads the turf closely down—a man and boy in this manner are supposed to plant fifteen hundred trees in ten hours.

It is also of importance, to attend to the size and age of the plants. From experience it has been ascertained, that except in very sheltered situations and rich soils, trees three, or at most four years from the seed, and from one to two feet high, will outgrow those of any size of the same species, under eight or ten feet within the seventh year, with the exception, perhaps, of the poplar and the lime.

Trees in general ought not to be nursed more than two seasons, having been previously one or two years in the seminary according to their kinds. The birch and alder should be two years in the seminary, but if the plants be particularly stout and healthy, they may at one year old be removed into nursery rows, and next season will be fit for planting. —A one year seedling larch, nursed one or two at most, will outgrow all others of its species in any situation, and firs of any kind will succeed best if from fifteen to twenty-four inches high. The spruce and Scotch firs, if the plants be stout, may be planted from the seedling bed, whereas, all tap rooted plants require a year at least, of nursing in a kindly soil—2-years seedling sycamore, ash, mountain ash, elm, birch and hornbeam nursed one season, are of an age most proper for planting —but two years seedling oak, beech, chesnut, and horse chesnut whose roots have been topped, and which have been two years nursed, are to be preferred. If the soil, however, be of great depth, and if the desire of immediate appearance and shew prevail, then plants of all kinds may be nursed still a season longer.

In all cases where planting becomes an object, the ground ought to be well cleared, completely drained, and effectually secured against the encroachments of cattle, as without these, it is vain to look for success. In the course of a few years, thinning is also essentially necessary for the attainment of valuable timber, and where this is properly performed, it has been found, that a tree will double its size every six years, so that the value of the timber as well as the beauty of the trees, is infinitely improved by this attention, and the thinnings will, in general, be sufficient in the course of a few years to pay all the expense.

Some prefer sowing oaks, rather than planting them, as this tree is slower of growth when planted than sown, especially for the few first years after planting. But by treading down planted oaks, they come little short of sown ones. Indeed many of the deciduous tribes are improved by treading down, if they have at any time symptoms of being stunted; when oaks are sown, it is generally the second or third year after the field has been planted, the other trees being intended as a shelter to the sown ones. April is the season for sowing, and three nuts of acorns are sown in a patch, and the patches are from twenty-four to thirty feet distant—the turf is pared off, and the soil stirred to its full depth about a foot diameter, in which, three acorns are deposited about three inches deep, and six apart; the patches will require clearing at midsummer, and in May following; then the best plant singled out in next March, and the others carried to the nursery.

Planting, independent of its being of national importance, will ultimately be profitable to the proprietor, especially on ground of inferior quality, as no crops can be cultivated, which in the end, will pay so handsomely for the trouble and expense. Should you consider the above of any use to your numerous readers, you may give it a place in your journal, and those who are desirous of more particular information on this subject, may consult Evelyn, Nicol, and Marshall.

I am, Sir, yours, &c. J. S.

On the effects of Age upon Fruit Trees.

(By T. A. Knight, Esq. F. R. S. P. H. S)

The fact that certain varieties of some species of fruits which have been long cultivated, cannot now be made to grow on the same soils, and under the same mode of management, which was a century ago perfectly successful, is placed beyond the reach of controversy. Every experiment which seemed to afford the slightest prospect of success, was tried by myself and others, to propagate the old varieties of the apple and pear, which formerly constituted the orchards of Herefordshire, without a single healthy or efficient tree having been obtained. I have detailed, in the Philosophical Transactions for the year 1810, an account of experiments which I repeated, with the hope of being able to ascertain, amongst the various organs of trees of aged varieties, which first failed to execute their functions; and I came to the conclusion upon the following and other evidence that it is the leaf. Having obtained by layers or cuttings, small plants of several of the most diseased of the old varieties of apples; these were grafted within a couple of inches of the surface of the soil, with scions of new seedling and luxuriant varieties, and under these circumstances the roots of the most debilitated and diseased varieties executed their office perfectly well, and were found upon examination, at the end of several years, wholly free from every symptom of disease. This process was reversed, and scions of old varieties were employed as grafts; but into the young growing shoots, which sprang from these, many buds of new and luxuriant varieties were inserted, and in the autumn every bud of the old varieties was destroyed. The inserted buds vegetated in the following spring, and by these efficient foliage was given, when every symptom of debility and disease disappeared, and the wood and bark of the most exhausted and diseased now constitute a part of the stem of large apple trees, and present, at the end of thirty years, as much apparent health as other parts of the stem of those trees. From these results I have inferred that the debility and diseases of such old varieties arise from the want of a properly circulating fluid, and that when such is given by an efficient foliage, the bark of the most debilitated variety possesses the power to occasion the necessary secretions to take place.—*Transactions of the London Horticultural Society,* Vol. 5, page 384.

(To be continued.)

The physiological and practical deductions which I draw from the above are as follow—

First—That gentlemen and farmers should pay much more attention to the PEDIGREE of their orchard and forest trees than they now do.

Second—That when the leaves of valuable orchard or forest trees shew disease at a season when they should be healthy, an immediate investigation should be made to ascertain whether it proceeds from an injurious subsoil, the effects of season, or a real disease in the plant.

Thirdly—If age and decay be the determinate cause, it may be worth trying whether grafting the patriarch tree in several parts with young and healthy scions, may not renew its circulation, and as leaves are the lungs of trees, drive away its " broken winded phthysic" and restore it for another cycle to its name and dignity—the monarch of the grove. This suggestion, when all more approved remedies have failed, has at least a physiological probability.—I am, Sir, your's,

SOUTHERN CULTIVATOR.

Summary of Returns under the Population Act of Ireland, 1821.

PROVINCES.	INHABITANTS.	OCCUPATIONS.			PUPILS.
		No. of persons chiefly agricultural.	No. of persons in trades or manufactures.	No. of persons occupied not in the foregoing classes.	
Leinster......	1757492	252608	215835	173215	114298
Munster......	1935612	320063	145917	150079	129295
Ulster	1998494	328793	584127	143818	104734
Connaught...	1110229	236605	224165	61590	46486
	6801827	1138069	1170044	528702	394813*

Commitments and Convictions in Ulster.

COUNTIES.	Population.	Convictions	Commitments.	No. at schools.	Proportion of convictions and pupils to population.	
					Convictions.	At school.
Antrim	270883	152	289	21576	1 in 1782	1 in 12½
Armagh......	197427	352	838	12407	1 in 560	1 in 16
Cavan.........	195076	185	1069	8806	1 in 1054	1 in 22
Donegal	248270	106	594	9521	1 in 2344	1 in 26
Down	325410	94	208	19546	1 in 3462	1 in 16½
Fermanagh...	130997	225	606	6335	1 in 569	1 in 21
Londonderry	193869	230	549	6721	1 in 862	1 in 28
Monaghan...	174697	191	787	7260	1 in 914	1 in 24
Tyrone	261865	268	779	12562	1 in 980	1 in 21

* Of this number, about one-third are females.

The Editor of the Morning Chronicle after inserting a table similar to the above, observes that the Counties of Down and Antrim have remarkably few commitments, and that in both there are only twenty convictions for assault, although the population is 596,293. This the writer ascribes to the cordiality which there subsists between Catholics and Protestants. Armagh and Fermanagh present a much larger catalogue of crimes, and particularly of assaults; and this he ascribes to the prevalence of the orange system. We think it would have been fair in this writer to have taken into the account the other circumstances, to which at least in some degree, and not to party broils exclusively, the number of offences may be ascribed. Illicit distillation seems to have been put down in Down and Antrim—In Derry, Cavan and Fermanagh offenders of this kind are still numerous, and even in Armagh there are a considerable number. In the list which we have made out, convictions for illicit distillation have been deducted, and when this has been done. the counties in question will not present so great a contrast in point of criminality as has been alleged. In the column to the right hand the proportion of persons receiving education (in 1821) is subjoined, and the adjoining column shews the proportion of convictions, by which it appears in a very striking point of view, that the number of criminals is diminished in proportion to the diffusion of education. Still it must be admitted that Armagh and Fermanagh, considering the state of education in these counties, present an extraordinary proportion of offenders, from which the opinion given in the Chronicle would appear not wholly without foundation.

ON THE PROPRIETY OF INCREASING THE GROWTH OF FINE WOOL.

It has been reserved for the Merino race to remedy all the defects of the other wools, and by the introduction of this blood, and its crosses, are the mountains of Ireland to become profitable.[*]

In those of Kerry, though the wool has been much deteriorated, the sheep bear the most manifest signs of having been originally Spanish, especially in the barony of Iveragh, and on the island of Valencia, where some few instances exist of wool very little inferior to Merino wool.

This fact is easily accounted for, from the frequent intercourse between Spain and that part of the Irish coast in former times. The form of the sheep of this district so strongly resembles that of the Merino, that if the wool was not examined, the eye of a tolerable judge of sheep might be deceived.[†]

The Society, upon the first importation of Merinos into Ireland, took active measures to secure some of the best for such of their own members as were most likely to give this new experiment a fair and unbiassed trial.

Of these importations, numbers eventually became victims to the hurry and starvation of their journey by land, and the crowding, heat, and abuse they underwent in their voyage by sea—many that survived for a short time, communicated to their offspring the feeble and diseased state to which their constitution was reduced, and thus brought into disrepute a race of sheep, whose value now begins to be more justly appreciated. Another fatal circumstance tended to this general disapprobation of the Merino kind. The foot of this animal appears to be more susceptible of disease than that of any other sheep, and to require a more attentive shepherd.

There are few proprietors of Merinos who have not this circumstance to complain of—some, by good management, have effectually succeeded in preventing lameness, whilst others have given up the breed in despair.

It is not by any means uncommon to see more than half of a Merino flock at pasture upon their knees. Then farewell to health and profit.

Which of the warmest advocates for Merinos will not admit the disgust he has occasionally felt at a neglected flock of this description? Where is the remedy? In skilful shepherding. Where are the skilful shepherds? Alas! not to be found. Let no man be so deceived as to speculate on Merino sheep, unless he possesses, or can procure a shepherd to be relied on. This is the hinge upon which almost the whole prosperity of this race of sheep will be found to turn; and it is a melancholy reflection, that from a dearth of farm servants of this description, so many thousands of acres in Ireland should be at present comparatively unproductive.

But, assuming that shepherds did exist, or might be trained for the careful management of these sheep—to counterbalance the defect which has been mentioned, there are favourable circumstances respecting them which ought to have some weight, especially when they present themselves in the shape of facts.

1st. That whenever you find a skilful shepherd in superintendance of a Merino flock, you find the sheep free from lameness, in perfect healthiness and good condition.

2nd. That no deterioration of the wool is to be apprehended. The Irish Merino wool (as well as that of other countries) being, at this day, of as fine a staple as that which was first imported.

3rd. That the Merino race is not only valuable in its own fleece, but as a cross for many other kinds, particularly for the South

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[*] The fleece of the native mountain sheep seldom arrives at 2lb.—the South Down rarely exceeds 2½lb.—either, crossed by the Merino, will, upon mountain pasture, yield fleece frpm 3½lbs. to 5lbs.—nearly double the weight, and triple the value in money.

Mountain fleeee, 2lbs. at 2s. per lb.	4s. 0d.
Merino cross ditto, 4lbs. at 3s. do.	12s. 0d.

[†] This circumstance has come under the observation of the reporter in that country. The first cross of a Merino on a fine Kerry ewe, not only in point of form, but in quality of wool, resembles the pure Merino, so as scarcely to be distinguished from it.

A sample of wool, of this cross, was brought from the Cerk sales to the Farming Society of Ireland, eight years back, by an eminent stapler, which was allowed to be equal to any imported Merino, and strongly resembling the Saxony wool in softness.

That the first woollen trade of Ireland was established in Cork and Carrick-on-Suir, may have arisen from the facility of procuring fine wools in the south of Ireland.

Downs, and mountain sheep of Ireland—the wool of which crosses has produced, at the sales of fine wool at the society's stores, prices nearly equal to the pure Merino.

4th. That though the Merino sheep is not a quick feeder, yet that at three or four years old the mutton is moderately fat and of excellent flavour, and that in the mean time the fleece will pay an ample profit.

5th. That the crosses on the South Down and mountain are both of excellent mutton quality, with abundant interior fat—and that those of the former cross arrive at early maturity.

The foregoing are a few facts relating to the nature and properties of the Merino race.

With respect to the fleece of this animal both in its purity and crosses, it is an acknowledged fact, that without this wool no superfine cloth can be produced—that the mountain wool of Ireland, which is the next best here, will, in its finest sorting, only yield cloth of fourteen shillings per yard—and that the best short wools in England, (except the Ryland) unmixed with Merino, cannot produce cloth of greater value than twelve shillings per yard*—and therefore, that the Merino wool, or those cross wools which so nearly resemble it in texture, are essential to the formation of superfine cloth. This is proved by another glaring fact, that about three millions sterling, yearly, are paid by England on the importation of foreign wools, enriching foreign countries with enormous annual payments, that under a judicious management, might be made to circulate within the united kingdom.

The Arts, Manufactures, &c. in France.

The Society of encouragement of Paris, held this month its customary sitting for the distribution of the prizes. The Secretary laid before the Society the result of the different competitions for the prizes of 1824, and ended by proposing that the following Premiums should be referred to the following year—Premium for the construction of a machine for clearing of thin hair, the skins employed in hat-making, 1000 francs; for paper from the bark of the paper mulberry tree, 3000; for the best memoir on the wool best calculated for hats, 600; for the silvering of looking-glasses, by a new process, 2400; for the improvement of the materials used in copper-plate printing, 1500; for the discovery of a metal or alloy of less magnitude than iron or steel, for dividing soft alimentary substances, 3000; for the discovery of a substance capable of being moulded like plaster, and of resisting the influence of air as well as stone, 2000; for the introduction of the mode of making wells used by the inhabitants of the province of Artois, three gold medals, value 500 francs each; for the improvement of iron founderies, 600; for the moulding of metallic castings, 6000; for the importation into France, and the cultivation of plants useful to agriculture, to manufactures, and to the arts, first premium 2000, second 1000; for the manufacture of isinglass, 2000; for the drying of meat, 5000; for a machine for working optical glasses, 2500; for a hand-mill fit for taking the skin covering or bark off dry vegetable substances, 1000; for the application of the hydraulic press to the extraction of oils, of wine, &c. 2000; for the manufacture of strings for musical instruments, 2000; for the establishment of the manufacture of crucibles, capable of resisting strong fires, 2000. Total 46,500 francs.

The reports of the different committees on the subject of the premiums already awarded were then read—

A premium of 2000 francs was awarded to M. Gordon for the manufacture of copper sticks, used in embroidering and lace-making.—A premium of 2000 francs for the preservation of alimentary substances. By order of his Excellency the Minister of Marine, two vases each, containing 60lbs. of beef, and of gelatine prepared by M. Appert, were embarked for the island of Bourbon in the year 1822, and have returned to France in the highest state of preservation. It is true that one of these vases having been opened while the vessel was under the equator, the substances it contained experienced some alteration: but it has been positively ascertained that this accident proceeded merely from a defect in the soldering of the vase. This experiment (says the reporter) proves the possibility of furnishing our ships with fresh provisions, whatever may be the length of the voyage.

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* Cloth, manufactured from pure Ryland wool, has been sold as high at 18s. a yard, when that made of other native wool produced no more than 12s.

A premium of 4000 francs has been adjudged to M. de la Molere, of Sours, near Chatres, for the construction of a windmill adapted for bruising and grinding corn, and also for all sorts of rural purposes capable of being accomplished by machinery. This mill which sets to the wind of itself, has been in activity for the last three years—the expense of its construction does not amount to more than 2400 francs (£100 sterling;) one might even be constructed so as not to cost more than £32, on a smaller scale. When there is not sufficient wind it can be worked by horses. This efficacious, commodious, and economical piece of machinery, is a valuable acquisition to agricultural industry, diminishing as it does, the expenses of employing horses, which in some counties form an eighth part of the cost of establishments of this nature. M. de la Molere has also applied this discovery to other objects, to hydraulic machines, &c.

* * *

Salt Manure.—The following experiments have been witnessed by Mr. Johnson, of Witham, Essex, with salt manure to wheat on a light gravelly soil, after a crop of potatoes, on one acre of which a quantity of brined ashes had been spread, containing about two bushels of salt, without any particular effect except where the heap of brined ashes was deposited for twelve hours. The produce of potatoes in that spot, was allowed by every person to exceed double the quantity obtained from any ground of equal extent in the field; and the plants far exceeded all others in height and strength. And as in the autumn this field was sown with wheat, by the drill, this spot afforded in 1819, the clearest evidence of the advantage of salt manure, extending with nearly as great effect to the second crop, as to the first; as the large quantity of wheat, and perfection of the ear, attracted the particular notice of every farmer passing by it, which superiority would have appeared somewhat greater, if the surrounding ground had not had some assistance, from the salted ashes, put on with the potatoes.

The following method of keeping common horses was practised by the Rev. H. Townsend, and recommended by him. The peculiarity of this mode is, that he keeps them in small detached stables with an open door, and a little yard adjoining, free from the restraint of a collar and at liberty to be out or in as they please. "I have now (says he) tried it for near four years, with all my working, and with some riding horses, and found it to answer my most sanguine expectations. To many it might appear a cold and uncomfortable birth in winter, did not experience clearly prove the reverse. The horses so kept have not only escaped getting colds and coughs, but in many instances got rid of those they had before. They have enjoyed perfect health, and never swell in the legs as is frequently the case with collared horses. Nor do they require so much care of rubbing them and cleaning. One of them, now 17 years old and in high health and condition, was subject to an occasional lameness, in one of the hinder legs, he had also a bad cough which I thought would end in broken wind: within the last two years he has completely got rid of both. The quantity of manure made in this way is considerable. I can safely recommend it, as an admirable method of keeping common horses."

The same gentleman adds the following judicious remarks. "I believe the duration of this excellent animal is generally underrated. A horse of nine or ten years old is reckoned to be little better than cast or superannuated, but in truth he often is so, not from decay of nature, but from ill usage. They possess no doubt considerable inequality of constitution, but I conceive there are very few horses, which fairly treated, and properly fed would not be serviceable at twenty years.—We see individual instances of their attaining a much greater age. The horse above mentioned has no appearance of age, and seems likely to last for many years, yet he possesses no particular strength of constitution: he is, on the contrary, rather slender and delicate. The unkind treatment this noble creature too often experiences is in truth no less injurious to the interests of the owner, than it is reproachful to humanity.

We the Corresponding Committee, request a Meeting of the General Committee of the North West Society, and also of the Subscribers to the proposed Agricultural Seminary, to be held at the King's Arms, Londonderry, on Wednesday, the 15th December, 1824, for the purpose of taking the subjoined letter into consideration.

R. A. FERGUSON.
JOHN FENTON.
WILLIAM MILLER.

Londonderry, 2d December, 1824.

23, *Rood Lane, London, 25th November, 1824.*

DEAR SIR,

At a Committee of the Grocers' Company, on the 23d instant, it was resolved—That an offer be made to the North West of Ireland Society, of the Premises at Fallowlie, in the Manor of Grocers, lately in the occupation of Mr. DAVID BABINGTON, together with about 123 acres of land surrounding the same, for the purpose of establishing a Seminary on a plan communicated by the N. W. Society to the Grocers' Company,

To be held from year to year from Michaelmas last, according to the Company's agreement, at Rents of fifty pounds for the House and Premises, and ten shillings per acre for the Land, it being understood, that at the expiraton of three years (should the tenancy so long continue,) the Company will advance the Rent. Such additions or alterations as may be deemed necessary in the Premises, (having been first approved by the Company's Agent) to be made at the expense of the Tenants, the Company finding Materials. The Fixtures to be taken at a valuation, and the Furniture to be offered to the Tenants on the same terms as it was purchased of Mr. BABINGTON by the Company.

You will please to enter the Grocers' Company for four Shares, and as soon as a Meeting has been held for the consideration of this matter, I shall hope to hear from you.

I am, dear Sir,
Your's most truly,
CHARLES WARNER.

WILLIAM MARSHALL, Esq.
Londonderry.

Is it for the farmer's interest to Fallow or not?

This question is started in Sir J. Sinclair's Code of Agriculture, in which work are the following remarks.—Of late years the question at issue has been very much narrowed. It is now on all sides admitted that light soils (where the culture of turnips is eligible) need not be kept in an unproductive state; and that on strong lands, under a judicious system, summer fallows are not required, more than once in the course of a rotation. The question is then considered as applicable to the climate of Scotland, of England, and of Ireland. With respect to Ireland our author observes that the system of fallowing for wheat is very generally adopted, in most of the corn countries, particularly in strong soils. It is however, more generally practised by tillage farmers from necessity, than from any real advantage which they derive from it. Among the wealthy and intelligent tenantry *fallow crops* are usually substituted, except in cases where the land requires draining, or some other operation that could not be performed, if under a crop. Fallowing on strong soils has yet, however, still many advocates, tho' all those lands which have been fallowed and cropped alternately, have progressively become less fertile; while those on which green crops have been substituted, have not been in the least deteriorated.

Difference of climate may require a difference in the management. Nothing however, but a personal inspection of the crops grown in Berwickshire and the Lothians, can give an adequate idea of the perfection to which the fallow system is brought in those districts; of the immense crops produced after it; nor of the advantages which are derived from a well-conducted fallow, by the subsequent crops in the rotation. In the culture of wet, tenacious clays, therefore, the fallow process has been called by an eminent farmer, the main spring of Scottish husbandry; and it appears from the evidence of an able and intelligent judge in these matters that clays subject to this process, will produce the greatest crops, and yield the highest rents of perhaps any in the united kingdom.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by MOSS. HEMPTON, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

Vol. III.—No. 4. Wednesday, 15th December, 1824. Price 2d.

ON MANGEL WURZEL, &c.

(From Evans and Ruffy's Farmers' Journal.)

Sir—I am, I know, in this communication, trespassing on your columns with subjects worn nearly thread-bare; but I leave it to your option to reject, or admit the whole, or as much as you please: my only recommendation is, that all I write is the result of practice.

Much has been written on the subject of Mangel Wurzel; I will detail my practice of growing, storing, &c. that valuable root. Giving the land as clean and fine a tilth as possible by the end of the first week in May, (if sown sooner many of the plants will run to seed,) then set the manure either on the level land, and spread it well; then lay it on two-furrow ridges with a double-breast plough: or, open the ridges first with the plough, and spread the manure in furrows, then cover it by splitting the ridge first made. I believe it to be of little consequence which method is pursued, provided the manure be well rotted and properly spread; in the latter essential I have seen much slubbering farming for all crops. The ridges must be levelled at top with a light roll. I then dibble the seed at from four to six inches distance on the top of the ridges; but it is necessary to be careful not to put it in too deep. I have of late years steeped my seed for at least forty-eight hours. I made an experiment with twenty sound seeds not steeped; twenty steeped twenty-four hours, and the same number steeped forty-eight hours; every seed of the latter produced plants, which came up two or three days sooner than either of the others; and some of those not steeped did not come up at all: they were put in as nearly as possible the same depth in open ground, and had no artificial watering. By seeds I would be understood the heads, which generally contain from two to four seeds.

When the plants are up, it is necessary to hoe the furrows in some way or other, and be careful to do it so as to get the plants clear of all weeds before they get too large. I plant so thick that there may be enough of plants to cut up, and leave those standing from nine to twelve inches distant on the ridges, which must be thinned by hand, leaving only one root in each place. I saw much labour and expense employed in transplanting into vacant spots, when the seeds have not been dibbled thick enough, but have never seen the transplanted roots worth half the trouble; the tap root being broken in drawing, nothing but top and useless rough roots and fangs are produced. I prefer the dibbling on ridges, to sowing broadcast, from the ease with which the land may be cleaned before the plants are large enough to hoe.

As soon as wheat sowing is over, I employ one or two men, who pull each two or three ridges of the Mangel Wurzel, knock it well, and lay it in rows: these men are followed by boys, who cut off the roots, (not injuring the crown of the root,) and heap them and the tops. With the tops, I have every year fed about twenty young cattle for several weeks, and have found them do extremely well. I have seen the tops fed off the land with sheep and they answered very well. It is necessary to cart the roots as quickly as possible after they are pulled, as I consider them very liable to be spoiled, when exposed to frosty nights, without shelter of the tops. In storing the Mangel Wurzel, I have a trench dug eight or nine feet in width, about a foot deep, and of the length necessary; generally on the headland of a wheat stubble. I have the roots stacked up to the height of five or six feet, where deepest, and the top drawn in, in imitation of a stack; when the roots are moist, I put a layer of dry straw, about four inches thick, in the middle of the heap, to prevent too much heating. Outside the heap, straw or haulm is laid, to prevent the mould getting between the roots; and the mould from the trench where the roots are deposited, and also from a trench about eighteen inches deep, dug round the heap, is laid all over it; and I generally cover all with haulm about two feet in thickness. Two boys to lead, a lad to drive, and a man and a boy to lay up, dig, &c. will secure about thirty loads per day in fine weather. I consider laying up, and keeping dry, essentially necessary to preservation. I have had some loads spoiled in a large heap, only by some mischievous person making a hole with a stick, on the top of the heap, by which the wet was admitted. I have lately grown my own seed, and I find by selecting the best and handsomest roots, I have much improved my stock. I generally use the Mangel Wurzel from the beginning of April and as far into May as it will last; and my pigs have since harvest eaten the roots from which the seed was produced this year, which were nearly all perfectly sound. What is termed soft land, and land lately converted into arable, answers best for Mangel Wurzel; but I believe the farmer of old arable clay soils will not find it answer his purpose.

I will now turn to the old subject of Smut in Wheat, in my opinion of which I agree with your correspondent *W. E.* jun. that most of the benefit of dressing is derived from the lime used fresh from the kiln unslacked, except by the air; I however steep mine in urine, often changed, and stir it and skim it well.—I formerly grew a considerable deal of smut, not enough however to injure the sale. I changed my seed, but it had no effect. I resorted to unslacked lime, liberally used, and my wheat is now as clean as that of my neighbours, who assert they grow no smut; but some smutty ears may be found in both their and my fields before harvest. Some years since I bought some wheat for seed of a gentleman, declared to be free from disease; I could however find some smut, and also in my own crop grown from it. If the seed is entirely clear from smut, what is the use of dressing? for if the land produces it, dressing cannot act as a preventive: besides, old wheat sown without dressing is found generally clear, the keeping having destroyed the embryo of the disease in the same manner as its destruction is intended to be effected by dressing.—I have known crops of wheat very much injured by the injudicious application of arsenic.

Allow me now, Sir, to request you or any of your correspondents, to inform me if there be any effectual preventive to cows slipping their calves, as both I and several other farmers in this neighbourhood have suffered very considerably within this last year, and have separated our cows, and used many nostrums without effect.

I am, Sir, your most obedient,
A TENANT FARMER.

On the same.

(From Evans and Ruffy's Farmers' Journal.)

Sir—The usefulness of the Mangel Wurzel or Letsom root seems now to be universally admitted, and its cultivation is consequently extending in all directions.

I have grown this root for three years in a garden solely for the use of a small dairy of three to six cows; and as I believe there is something of novelty in my garden practice, but such however as is in the power of any gentleman or farmer to accomplish, I shall give it to you in detail.

As soon as the frost in the spring is gone, the Letsom root seed is sown in a bed wherein late or winter potatoes grew the last year; the seed is sown as thick, or rather thicker, than you sow cabbage seed; well raked, and kept entirely free from spring weeds; this bed is to furnish all the plants for the season.

As soon as the early peas of the dwarf sort are sticked, I have a row of Letsom plants (always taking the largest that the bed can supply) placed on each side of the rows of peas, about 18 inches from each other, and about three inches from the outside of the sticks. With the early cabbage beds the same mode is adopted, except that in those beds the Letsom plants are placed exactly in the middle between the rows of cabbage.—As soon as the peas are picked, the haulm and sticks are removed, and when the early cabbages are cut, the stalks are pulled up; then again, immediately as any beds of vegetables, such as peas, cabbage, beans, carrots, onions, and potatoes, have their respective sowings finished, I have the alleys between such beds dug a spit deep, and the Letsom roots planted about 18 inches asunder; and further, as the first crops of potatoes are dug out for daily use, their place is filled every two or three days (according as space or weather will allow) with the plants. By these various means I am enabled to raise between 3 and 4000 roots in a fruit and vegetable garden of about three fourths of an acre, and the largest part of which is now as green as in spring under this crop of Letsom roots.

In November, I have the roots taken up, and cutting off the leaves (which are given to the cows) about half an inch above the crown, and cleaning them coarsely from dirt, they are placed in a pit, such as is used in this county for the preservation of potatoes during the winter, and which being exactly described by your correspondent, *A Junior*, in your Journal of the 25th of October last, I need not repeat here.

My application of these roots has been hitherto in the feeding of cows; those that are in pail receiving a greater quantity than others. They are thrown to them on a piece of pasture, and any shells, or remnants are cut into slices, or chopped with a spade, whereby every morsel is eaten. I am, Sir, your's, OMEGA.

P. S. Perhaps it is not generally known, that the boiled leaves of this plant are an excellent substitute for spinage, insomuch that since I have adopted the culture, I have ceased to grow the latter.

LONDON MECHANICS' INSTITUTION.

Yesterday being the first Anniversary of this most admirable institution—the first stone of a Theatre for Lectures was laid by Dr. Birkbeck, after which that gentlemen, who is the president, thus addressed the meeting—

" Now have we founded an edifice for the diffusion and advancement of human knowledge. Now have we begun to erect a temple, wherein man shall extend his acquaintance with the universe of mind, and shall acquire the means of enlarging his dominion over the universe of matter. In this spot hereafter the charms of Literature shall be displayed, and the powers of science unfolded to the most humble enquirers; for to the feast of reason which will be here prepared, the invitation shall be as unbounded as the region of intellect. For an undertaking so vast in its design, and so magnificent in its objects (nothing short indeed of the moral and intellectual amelioration and aggrandisement of the human race,) the blessing of heaven I humbly trust, will not be implored in vain. If in this institution we seek to obey the mandate which has gone forth, that *knowledge shall be increased*; if we act in obedience to the injunction, that in proving that for the existence of the mental wilderness, the continuance of which we ought all deeply to deplore, we " ought to blame the culture not the soil;" if by rendering man more percipient of the order, harmony, and benevolence which pervade the universe, we more effectually assert eternal Providence, and justify the ways of God to man; and if thus we shall be the happy means of rendering it evident, that the immortal essence within us, when freed from the deformity of ignorance and vice, has been created in the express image of God, then may we confidently hope that Omniscience will favourably behold our rising structure, and that in its future progress, Omnipotence without whose assistance all human endeavours are vain, will confer upon us a portion of his powers.

" Whilst I remind you that the illustrious Bacon long ago maintained, that knowledge is power, I may apprize you that it has since his time been established that knowledge is wealth—is comfort—is security—is enjoyment—is happiness. It has been found so completely to mingle with human affairs, that it renders social life more endearing; has given to morality more uprightness; and politically has produced more consistent obedience—it takes from adversity some of its bitterness, and enlarges the sphere as well as augments the sweetness of every laudable gratification; and lastly, unquestionably one of its brightest influences—it becomes at once an avenue and a guide to that temple which is not made with hands—eternal in the Heavens."

This address was heard with deep and respectful attention, and at its conclusion the acclamations of the assembly evinced the high interest they felt in the proceedings.—The building, when it is completed, will contain about 1200 auditors.

Anniversary Dinner.—This first anniversary of the Society was celebrated at the Crown and Anchor Tavern; Dr. Birkbeck in the Chair. The meeting was both respectable and numerous, and comprised some of the most distinguished names amongst the practical and theoretical Mechanics of the Metropolis. As soon as the cloth was removed,

Dr. Birkbeck rose and said, it was a good old custom to preface the conviviality of such meetings, with the name of the exalted personage which they should quickly hear, but on the present occasion that name had a much higher recommendation than mere custom, for they must all very well remember, that early in the present year, when a meeting had been held for the purpose of commemorating the fame of a distinguished mechanic, a man who had spent a life humble in origin, splendid in progress, and glorious in its consummation —he meant the late James Watt (cheers:)— On that occasion, his Majesty, through the mouth of the first minister of the country, repeatedly expressed the disappointment he should feel if his name should not be placed at the head of the subscription for raising a monument to the memory of Watt. Thus might he say, that a noble homage had been paid, by the monarch of the first country in the world to the majesty of genius.

He should therefore propose with the greatest delight, "The health of the King." His Majesty's health was drunk most enthusiastically.

Dr. Birkbeck observed that when he looked to the number and respectability of the present meeting, he wanted no better test of the advances the Institution had made in public opinion. It would be superfluous to advert to the origin of the Society, to descant on the progress it had made, or to explain its present condition. He would content himself with proposing "Prosperity to the London Mechanics' Institution."

Mr. Brougham next rose to address the meeting, and was received with great applause. He commenced by stating that he could not but conjecture, that the numerous meeting whom he saw assembled, had some suspicion of the toast he was about to propose from the very kind manner in which they had countenanced his attempts to address them, and that they must have conceived he could have nothing less in view than a proposal to the Meeting to join with him in drinking "the "health of their able, excellent, and valuable president—Dr. Birkbeck"—They were all aware that it was not here for the first time, their mutual friend had laid the foundation of an Institution, which, if he were not mistaken, was calculated to produce a vastly greater and more beneficial effect, upon all that relates to the real interests and happiness of mankind, than any other which has hitherto attracted the attention of the public. It was 24 years ago that Dr. B. had laid the foundation at Glasgow, of an establishment second to none but that which they were assembled to promote, but although the foundations were laid amongst a most enlightened and inquiring people, still little progress was made until the metropolitan institution had struck deeply its roots into the heart of the country, which roots were now spreading most extensively into all parts of the empire. The success which has hitherto attended the progress of the system, has displayed the most undoubted symptoms, that similar institutions will arise in all the towns of England and Scotland; and it will also teach this important lesson, that if a great capital like London does possess those vices and concomitant miseries which are inseparable from a dense population, still in the end it recompenses mankind by the great advantages which it dispenses; for it will always be found, that the circulation which commences in the great heart of the empire, is propelled through the remotest branches of the community, begetting and nourishing in each a kindred feeling, from which at length are produced those beneficial results and that unity of design which in vain you would look for, had the work begun in the extremities. Now that establishments of this nature should spring up in Leeds, Manchester, Liverpool, or Birmingham, would surprise no man, for there the match was prepared, and it only required the application of the spark to kindle up the flame; but it could not fail to excite astonishment, that in some of the smallest and most remote towns, the spirit of this Institution had been discovered. In the little town of Howick, in Scotland, and in Kendal, in Westmoreland, similar institutions had sprung up. It was not to be supposed that in a contracted town, although mechanics might be numerous, they would have sufficient wealth to expend their money on a library, mechanical apparatus, and lectures; and even if they were disposed, great difficulty would be experienced in procuring the latter object, namely duly qualified lecturers. It therefore most fortunately occurred to the industrious mechanics of Kendal, that although they might not all at once be able to embrace the various objects of the metropolitan Institution, still they could establish a reading room, and purchase some useful books for circulation among the artizans of the town; and accordingly it turned out as might naturally enough be expected, they succeeded so well in their undertaking, that within six months from its establishment, an individual of great ability had volunteered his services to lecture to the mechanics, and the consequence was, that they have at present a reading-room, library, lectures, and apparatus. In the same way at Howick, they have a lecture-room and apparatus, and have laid the foundation of a permanent arrangement for carrying into effect the views of the parent Institution. He might mention various instances, but the smaller the places the more striking the examples, and when in the course of one year and a half, such benefits have arisen, was he not justified in entertaining the sanguine hopes he had entertained as to the future prospects of the Institution? Now, although it is to the mechanics themselves, we must always look for the practical execution and accomplishment of our views, yet they should not forget those men who had been mainly instrumental in the formation of the Society. He for one should never respect any man, be his professions what they might, be his zeal for the poor, and his anxiety for their happiness never so loudly proclaimed, he would not suppose him sincere in his wishes to do good; he never would admit that he possessed the will to serve, and the sense to discover what could serve his fellow-man, if he resided in a neighbourhood where there were numerous mechanics, and did not come forward with his service, with his co-operation, and if need be, with his purse, as far as his ability enabled him, for the purpose of establishing a local Mechanical Institution. *It was to him a source of the greatest delight, that these Institutions might be promoted by all men consistently with every shade of political and religious opinion.*—There was no sect—no party, no matter how opposed, that might not agree on the utility of these Institutions. Now they were all practical men and not visionaries; and with such men one practical instance was worth a thousand observations. Now one man might most conscientiously differ with another on that great political question, which more than all others divides men, namely the propriety of giving the people a more direct interest in the government of the country; for that is the real question which is commonly called parliamentary reform. One man might very conscientiously differ with him, in thinking that the people had quite as much power as they ought to possess; and such a man's opposition he would always respect, if he thought it proceeded on no sinister or corrupt feeling. Now he might think that the people had by no means their sufficient share in the management of their concerns. But then would come a man who would maintain that they had full participation, and that he could not consent to give them more. Ask him why? and he will tell you it could do no good. Ask him why it would not be productive of good? and he would reply, because the people were not sufficiently enlightened to receive an extension of power. Surely then the more knowledge you give them the better; making them more knowing and more wise, you may make them better, you cannot make them worse.

There was a remark made many years ago by a distinguished person in a neighbouring country—in France. The remark was made about twelve years before that great change had taken place, which so completely altered the face of things in that nation. He seeing the symptoms which have been long since verified, said—"If the young folks of the present day live, they will see great things before they die," and if that prediction might then be made of France, how much more truly might he now make it of the world generally, but particularly of England and North and South America? Indeed it appeared to him that so great would be the advances in wisdom and intelligence in forty years hence, that those who are now old, could they then look down on the scenes they had left, they could scarcely believe it to be the same place. Some in that room might live to see that period—others would not; but if any should live even for the space of five years, he was persuaded they would see the most astonishing change in the happiness, the prosperity, and the power of this country.—That this happy change might take place, all must desire—in anticipation of these approaching benefits, let them not forget those individuals who had been instrumental in opening the way to them, and above all let them not forget that excellent president who now fills the chair.—Dr. Birkbeck's health was drunk most cordially.

The worthy chairman returned thanks.—Should any of the benefits arise which had been predicted by his celebrated friend Mr. Brougham, it would be a sufficient compensation for his labours. It would be to him the greatest delight to see information diffused amongst a class of minds, where hitherto knowledge had almost perished for want of education, and in which ingenuity was deprived of its fair operation—they were humble, therefore they were neglected. The changes which had taken place in public opinion it was scarcely possible to believe, since the first establishment of these institutions, whether this alteration had arisen in the intellectual state of man; whether circumstances were different; or whether the subject was better understood—from whatever cause springing—certain it was, that this gigantic intellectual fabric had sprung up with a velocity and power, which in former times would have been thought the work of the magician.

Mr. Hodgkin (one of the Editors of the Mechanics' Magazine.)—The idea of the institution had first occurred to Mr. Robertson (the other Editor); they talked it over, and he himself drew up a paper, which after some alterations was published. They had certainly caught the idea from the institution at Glasgow, and from the School of Arts at Edinburgh. Dr. Birkbeck wrote immediately to the Editors, offering his assistance, and it was his belief, that without Dr. B.'s name and active assistance, the Society never would have been carried into effect. In the humble efforts which he, Mr. H. had made to advance the education of the mechanics, he had been stimulated by observing, that the progress they had already made, had done much to elevate them in society. In the ancient world, all mechanical operations were carried on by slaves; and even Cicero had said—"that there can be nothing ingenious in a workshop; that commerce when conducted on a small scale, was mean and despicable, and when most extended, barely tolerable." Of this ancient prejudice, modern mechanics were still the victims; and if they were at all raised above it, they owed it partly to their working with quite different tools, and employing very different instruments from those formerly in use. They were no longer mere workers with edge tools, but had pressed the great powers of nature into their service. The mechanic in the gas works was a chemist of considerable skill, and converted a quantity of coals into products of ten times their value. In the manufacture and use of steam-engines he used that same expansive power which rent asunder the highest mountains. It was seeing what they had already performed which led him to hope so much from, and to do what he could to promote the scientific instruction of, the people, for it was impossible to tell what unknown powers they might yet press into the service of mankind, when instruction was within their reach. It was also worthy of remark, that as they had found out or employed new powers, they had created new professions and new trades, which simply because they did not exist when our ancient restrictive laws were enacted, were exempted from their operation. This was an encouragement to the mechanics to proceed in the good work, for they might thus see a means of emancipating themselves and posterity from those barbarous restrictions; and they might see in it a strong evidence of that general kindness and benevolence of nature, which found out, in the progress of man, a remedy even for the follies of legislators.'

Lieutenant Colonel Torrens then said—One great advantage, he was persuaded, must flow from establishments of this kind, and it was this, that the more enlightened the mechanics became, the more convinced must they be that there could be no diversity of interest, between those who furnished the capital, and those who supplied the labour.—The lowest class of the commnnity would then have intellect enough to discover that labour, like all other commodities, when brought into the market, must bear a proportion to the demand; and that as no combination amongst the workmen, could raise the prices of labour above the level which the quantity of capital must determine, so no combination among the masters could diminish the priceo f labour, below the fair level which the quantum of labour in the market must determine; and each knowing their own interests, would mutually contribute to banish that barbarous animosity which ignorance had engendered. In fact, we are all members of one family, and you cannot break a link in that chain without affecting the whole. In the delightful anticipations of good likely to result from these Institutions, allusions had been made to their progress in England and Scotland. He belonged to another portion of the empire, into which he should rejoice to see these establishments introduced. In England the contest was how far science could be made subservient to promote the general benefit of mankind; but how lamentable was it in Ireland to find that men never assembled, except for the purpose of tearing one another asunder, on account of some shadowy differences in religious opinions. Were they apprehensive of danger on account of religion? No—and why? Simply for this reason—they were the disciples of Bacon and Newton. —The disciples of Newton and of Bacon could not be frightened by Monkish dreams. All their reasonings were deduced from experience and derived their authority from the evidence of the senses. Many strange things have been transmitted by tradition and history, and their only authority was that of the person who told the tale or who wrote the book. He was anxious to have some public occasion to enter his protest against the old slavish cry which had been raised by bigots, with a view to stifle the free spirit of civil and religious liberty.

Report and Certificate on Fiorin Grass, cultivated in Argyleshire.

At the request of Mr. Donald Maccoll, we have this day inspected a field of fiorin grass, at Lettershuna, Appin, consisting of about three English acres, and on having part of the grass cut and weighed, find the produce to be 2325 stones to the acre and half. The field in question, until it was lately prepared for fiorin grass, was not worth ten shillings per acre annually, from its wetness, and from its having been principally covered by brush wood, rushes, sedges, &c. and we now consider it well worth ten guineas per acre, from the immense quantity of winter-food upon it, where winter food for cattle is so valuable. Mr. Maccoll's first operation upon the field was to root out the bushes, then to drain the land as well as possible from its local situation, but we consider it still too wet for general cultivation. He then got it delved with spades, making the surface nearly as smooth as an onion bed. Fiorin plants were obtained all the way from Mr. Baird, at Shotts, to insure the proper quality, that gentlemen having formerly obtained a premium from the Highland Society for the same article. The strings of the grass were laid with great care at distances of three or four inches from each other, and afterwards men were employed with barrows to carry on a top-dressing of fat earth and lime to cover the plants, but there was not a sufficient quantity of this compost laid on to secure them entirely. Barrows were preferred to horses and carts, because the horses' feet and cart wheels would have deranged the plants; besides the wetness of the season made part of the field too soft for horses and carts, although they can now be used in carting off the grass without the least injury. Half the field consists of clay and loam, the other half is mossy, tho' perhaps it may be termed peat earth; and the fiorin seems as nearly as possible equally luxuriant over the whole. Many who have come from a distance to inspect the field, have expressed a determination to prepare land for fiorin grass immediately. It may be observed that such operations as the above are too expensive for many men's means; but let it be remembered, that the field is now permanently laid down, and that a top-dressing of ashes, dung, or a little earth mixed with lime will give a produce of the value of at least ten guineas per acre annually. *Highland Society Transactions, Vol.* 6, *page* 229.

JOHN STEWART,

Minister of Lismore and Appin.

Early Turnips for Soiling.—Mr. Curwen sowed, one year, the yellow, white, and green turnips, during the first two weeks in May, and his crop was without exception the best in his own neghbourhood, but was not surpassed in any part either in the North of England, or of Scotland. On the 18th of August his turnips weighed 22½ tons, and on the 30th of August, they were 30 tons on superior soil and raised with manure; and on the 2d September they weighed 22 tons.—On the 10th September, his turnips raised with bones, sown a week later than the former, weighed 22¼ tons, and those raised with manure from London, 20 tons 16 stones, while the common town ashes produced a crop of 27 tons. On the 28th September, they weighed 36 tons; and on the 7th of October the green globe weighed upwards of 40 tons. The great advantage derived from this system is, that those who soil are not under the necessity of cutting their clover crops a second time, which not only very much deteriorates the soil, but in some instances, as was the case frequently this season, it hardly repays the expense of cutting. It is very possible, in good seasons, to have the turnips ready for drawing in the end of July, since during this most unfavourable of all seasons, they have been ready in August.—*Munster Magazine.*

Flax Premiums in Londonderry, 24th Nov.

James Smith, Cumber, 1st Premium	£2	10
Thomas Ross, Glendermot, 2nd do.	2	0
Joseph M'Cutcheon, Glendermot, 4th do.	1	0
Robert Smiley, Templemore, 5th do.	1	0

The other Premiums withheld from Henry Lynch, and John Mackey.

1st December.

H. Stevenson, Taughboyne, 1st Premium	£2	10
Joseph Lithgow, Glendermot, 2nd do.	2	0
James Sterrat, Taughboyne, 3rd do.	1	10
James Baird, Taughboyne, 4th do.	1	0
Stewart Christy, Cumber, 5th do.	1	0

Christ. Tate, Glendermot, no Premium.

8th December.

Ezekiel Bredin, Templemore, 1st premium	2	10
Rev. H. Carson, Glendermot, 2d do.	2	0
John Cather, Cumber, 3d do.	1	10
Matthew Greer, Burt, 4th Premium	1	0
Christ. Tate, Glendermot, 5th do.	1	0

Stephen Kerr, All-Saints, and Brian M'Elwee, Lifford, no premiums.

The flax which belonged to the different competitors was brought to market in a manner highly creditable to them, but we are sorry to observe, that the market, in general, notwithstanding the encouragement given by the Linen Board, does not present that degree of improvement which might be expected.

CURRENT PRICES IN DERRY.

Oatmeal ...	13	0	*to*	13	9	*pr cwt.*
Oats ...	0	11	–	1	0	*pr st.*
Barley ...	0	12	–	0	13	
Potatoes ...	0	2	–	0	2½	
Beef ...	0	3½	–	0	5	*pr lb.*
Mutton ...	0	3½	–	0	4	
Veal ...	0	5	–	0	7	
Butter ...	0	9	–	0	10	*pr18oz*
Firkin Butter, 1st	104	6	–	105	6	*pr cwt.*
Do. 2d	98	0	–	0	0	
Do. 3d	88	0	–	0	0	
Flax uudressed	37	0	–	54	0	*pr cwt.*
Five hank yarn	2	9	–	3	4	*pr spl*
Four do. do.	2	7	–	2	10	
Three do. do.	2	8	–	2	11	
One do. do.	2	6	–	2	8	
Hides ...	41	0	–	65	0	*pr cwt.*
Pork ..	41	0	–	45	0	*pr cwt.*

☞ By mistake the Rev. Dr. Austin's order for the Magazine was not attended to in due time.—We feel greatly obliged to Southern Cultivator for his exertions on our behalf—he will please to observe that the Highland Transactions are in our possession.

⁂ The Corresponding Committee having inspected the Accounts relating to the Magazine, according to a resolution entered into at the last General Meeting, find that several subscriptions remain still unpaid.—The Committee request that all such outstanding debts may be discharged, without delay, in order to enable them to make out their Report.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. III.—No. 5. WEDNESDAY, 22d DECEMBER, 1824. Price 2d.

At a Meeting of the General Committee of the North West of Ireland Society, and the Subscribers to the proposed Agricultural Seminary, held at the King's Arms, Londonderry, on the 15th December, 1824,

Present—The Lord Bishop of Derry in the Chair.

Sir G. F. Hill, Bart.
Rev. William Knox.
James Sinclair, Esq.
George Lendrum, Esq.
Sir Robert Ferguson, Bt.
John Rea, Esq.
John Fenton, Esq.
M. S. Hill, Esq.
Rev. Spencer Knox.
Rev. F. Gouldsbury.
Rev. Edward Bowen.
Rev. Francis Brownlow.
Hugh Lyle, Esq.
Carey M'Clelland, Esq.
Andrew Ferguson, Esq.
John Boyle, Esq.
Alexander Alexander, Esq.
Thomas Scott, Esq.
William Miller, Esq.

The Secretary then proceeded to read a letter received from Charles Warner, Esq. dated 25th November, 1824, offering the Farm of Fallowlie, in the Manor of the Grocers, to the North West Society, for the purpose of establishing on it an Agricultural Seminary.

Resolved unanimously—That the offer made by the Grocers' Company to the North West Society, through their agent Mr. Warner, of the Farm of Fallowlie, in the Manor of the Grocers, is such as cannot be acceded to by us as Trustees to a public body.

Resolved—That an advertisement be inserted in the following papers, for proposals from persons willing to let a proper sized farm with suitable buildings, fit for the establishment of the proposed Seminary, viz.—Evening Mail, Evening Post, Belfast Commercial Chronicle, and Londonderry Journal;

And that such proposals, &c. be forwarded to William Marshall, Esq. Secretary to the N.W. Society, at Londonderry, prior to the 11th of January, 1825.

Resolved that the proceedings of this day be forwarded to Mr. Warner, by the Secretary.

☞ In our last page will be found a very necessary piece of information for persons who have Mills or Kilns, and who may have neglected to have them registered.—Gentlemen taking the Magazine would do well to circulate this information.

To the Editor of the North West Magazine.

Bannow Agricultural School, Dec. 13, 1824.

SIR—As the petty Irish farmer seems unwilling to admit, that turnip or mangel wurzel crops are more productive than potatoes for the winter feeding of cattle, I beg leave to request your publication of the following calculation (from actual experiment,) of the *relative quantities* of those vegetables which an Irish acre will yield.

Supposing the drills to be 2½ feet apart, and the plants one foot asunder in each row, and each root to weigh (exclusive of leaves) 5lbs. the produce will be 63 tons per acre.—Supposing the roots to weigh 7lbs. each (the distance as above) the produce will be 88¼ tons per acre—and 10lbs. each, the produce will be 126 tons per acre.

Now, Sir, I have weighed several roots of the mangel wurzel and Swedish turnip, which the Bannow pupils raised this year, and found the average weight to be 8lbs. each, (on soil of *indifferent* quality) therefore I am certain that the average of 7lbs. each root, for an entire crop, will in several cases be found within just limits; that is, that 88¼ tons per acre of mangel wurzel or turnips may be raised. What is the weight of potatoes on an acre of the very best land? Say the enormous quantity of 200 barrels, (20 stone per barrel) or 25 tons, there will by this estimate be an excess of 63 tons in favour of mangel wurzel or turnips. Besides the weight and value of mangel wurzel *leaves* must be estimated very highly in the months of September, October, and November.—They afford admirable food to milch cows and pigs, the latter would, I believe, prefer them even to *plum-pudding.* We fed the milch cows last winter on this valuable vegetable, and found that it enriched the milk, considerably increased its quantity, and did not in the slightest degree injure the cows. Next year I hope to have orders for raising a more extensive crop than the circumstances of the farm have hitherto permitted. I must, however, beg leave to observe, that mangel wurzel will not succeed in wet, stiff, or poor land, nor will it flourish when transplanted. I may say the same of Swedish turnips—when transplanted they are very inferior in size to those which remain undisturbed in the spots where they are sown. Where the unsuitableness of soil, want of sufficient manure, &c. oppose the sowing of a mangel wurzel crop, turnips will be a better substitute, for feeding cattle than potatoes—where the one crop will grow the other may be expected. The advantage of the turnip tops, too, is considerable, and the economy of sowing turnip *seed*, instead of planting potatoes at perhaps 6d. per stone is well worth some attention.—I am, Sir, your obedient humble servant,

JOHN GRAY,
Agricultural Master.

To the Editor of the North West Magazine.

Sir—Whether the subject of the present letter has been submitted to the public thro' your Magazine or not, I cannot recollect; but if not I think it worthy of some attention. Experience tells us that all seeds or plants from a warm climate, will not come to the same perfection that they arrive at in their native soil. The corn of France, Italy, or the warmer countries, cannot, with propriety, be introduced here—indeed the corn even from the south of England should be received with great caution. The fortunate possessor of the Jerusalem wheat humbugged the country out of a large sum, and so far he may be called fortunate by putting it into his own pocket. The flaxseed of France will not thrive with us, and an experiment of an import from Sicily, some years back, did not answer the expectation formed from it. It is a safe speculation to take our change of seeds from the north of England, south of Scotland, or the northern parts of the continent—even Dutch flaxseed requires stronger ground than Riga. America enjoys, within itself, a variety of climates—we have had experience of flaxseed from the southern to the northern states. Baltimore seed, although its produce may be good in its own climate, never answered the wishes of the farmer in this. It was generally sold the cheapest, and being bought by the poor, added to their poverty—the country, even among the most ignorant, are now aware of it, and the consequence has been that all direct import has ceased for years. Baltimore seed was sure to tick or fire, from what cause it is not necessary now to inquire, but either our soil or climate was not congenial.

Philadelphia, farther north, produced a better seed, but still uncertain—some years it turned out well, and others disappointment takes place. New York, farther north, the seed the produce of its neighbourhood is suitable to most soils in this country, and when an unmixed real seed is procured from thence, rarely any instance of failure takes place; but still there is not the same certainty attending the produce both of quality and quantity that there is from the Riga. Boston seed rarely comes to the Derry market, I have sown of it in former years, and have no hesitation to declare, that I would place it upon the footing of the very first quality, suiting well our soil and climate. What I have seen stated, I feel is absolutely necessary as an introduction to a grievance I am now to complain of. Since the new intercourse with Baltimore to the port of Derry, the principal part of the seed produced there is shipped to New York; it is there cleaned and put up in casks with the New York brand—and thus, under the authority and certificate of a superior article, is this evil introduced among us, both mixed and unmixed, and accounts for the many disappointments experienced by farmers, particularly in backward countries, where American seed is in the greatest demand—and thus a seed, which, if imported pure and unmixed, would insure to the farmer a fair return for his labour and money, is now, in consequence of what I have herein stated, every year getting more and more out of repute.

I am credibly informed, that every kind of southern seed is sent to New York to be cleaned and exported thence with their character, and while such a trade is giving life and bread to thousands there, it is dealing great destruction to thousands here. It is a common question to ask—"Neighbour, what is the reason your flax did not turn out well this year?" The answer is, I know not—I sowed New York and it never failed me before, I must try some other labour with my land—the next year may turn out well, the different labour obtains the praise, but never does it enter into the calculation that one year he has sown Baltimore seed, or a mixed New York and Baltimore, when the other year he was so fortunate as to obtain the real produce of the State. I have frequently viewed fields sown with the mixed seed which neither ripened equally, nor grew of equal length—of course the crop was lost. Could not a similar remedy be provided for this—might not all seed be obliged to be verified before our consul at the port from whence it is shipped, to be the growth of the adjacent country, *and that too without expense*, as our consuls are but too well provided for already, and our trade but too much burthened with fees and restrictions, or villainy of your correspondents—be pleased to point out a more easy and effectual remedy: this I should think, is the province of your chamber of commerce, and to them I shall leave it to bring about some regulation for a future season. G.

1st December, 1824

GAS VACUUM ENGINE.

From the intense interest that has been felt in this country, as well as on some parts of the continent, relative to the new and splendid invention of the gas vacuum engine, we are certain it must afford our readers much pleasure to learn that the inventor has already begun to reap the first fruits of his ingenuity. We understand from good authority, that he has disposed of the Scotch patent for a very considerable sum. This circumstance is not surprising to those who are acquainted with the principle and powers of the engine, and the numerous advantages of which it is possessed. It can be used in almost all cases where steam can be employed, and in many where it cannot. From the time the engine has been at work, most of the eminent scientific and mechanical men in London have had an opportunity of judging of its construction; and though few of them would give credit to its astonishing powers before seeing it, we have heard of none who went away after inspection without a full conviction of its merits. To society at large Mr. Brown's discovery promises to be of immense advantage, and to no portion of it more than the landed interest, as one of the chief purposes of the engine, is to drain fens and mosses, to raise water from mines and coal pits, &c. Some idea of its power may be formed from the fact of the first engine that has been made of one and a half horse power, being able to raise 300 gallons of water about 20 feet high, with only one cubic foot of gas.

We are also informed that the proprietor has taken out no less than 6 patents, viz. for England, Scotland, Ireland, France, Holland and America; and it proves the high estimation in which the American government hold the invention, that they have in this instance deviated for the first time from their law, of granting patents to American citizens only, or to those intending to become such. There are now three carriage companies formed in London, for the purpose of applying the gas engine as the propelling power. The shares of the first, whose capital is £200,000, are selling at £3 premium; and a fourth company is expected to be established.

We have conversed with several individuals who have witnessed the operations of the engine; and if any doubts had remained on our mind, they would certainly have been dispelled by the perusal of a report that we have been favoured with, drawn up by professional authority of the first eminence, and which is very flattering and satisfactory.—*Eng. Paper.*

Highland Society of Scotland.

The third annual show of live stock, implements of husbandry, &c. took place in Edinburgh in the beginning of this month.—This exhibition which the Society has hitherto considered of an experimental nature, we now view with satisfaction as eminently successful, and rejoice to see that breeders are determined to support it, by presenting the materials of a keen competition, and buyers not less willing to offer handsome prices.—The attendance of noblemen and gentlemen from all quarters was highly respectable.—The venerable Earl of Mar, ever alive to whatever may promote the agricultural prosperity of Scotland, presented for consideration, a model of improved stalls for the feeding of cattle.

The store cattle attracted special attention. From the specimens shewn we think that the object of the Society promises to be attained, and the materials for a good show of fat in future years liberally provided.

The first class of preminms was for the best two fat oxen of the short horn breed, not exceeding three years old, and the plate was awarded to Mr. J. Rennie, jun. of Phantassie, for his spotted oxen, bred by himself, two years and seven months old, fed solely on grass, turnips, and a little hay. These were noble specimens of early maturity, and well placed fat. They were computed by butchers to weigh 105 stones sinking offal, and sold for 80 guineas. In the second class, for West Highland cattle fat, there were four animals affording perfect pictures of this much esteemed breed. Sixty guineas were paid for the two oxen which obtained the second premium in this class.

In the class for Aberdeenshire lean cattle we were surprised that no competing lots were produced, of a breed so well known and so highly favoured in a large district of country.

From the class *for Scotch cows of any breed for breeding*, the premium was withheld.

Short horn ox shewing most symmetry, fat and weight. Three were exhibited, Mr. Rennie's roan ox obtained the premium.—He was sold with a former pair at forty guineas over head. The second animal (Mr. Somner's) with his sister was sold for seventy guineas. Another ox though last not least, was supposed to weigh 160 stones, sold for fifty guineas.

Class of any breed short horn excepted.—This class produced two uncommonly perfect animals, an Aberdeenshire ox of Mr. Bogue's, and a West Highlander of Mr. Fletcher's.

There were also fine samples of black-faced wedders—South Downs, and Cheviots.

The best boar of any breed. Mr. Rennie's of the Bedford breed obtained the first Premium. The pig shewn by Mr. Gray was a perfect beauty.

Extra Stock.—There were 14 lots of cattle of every description. An Ayrshire bull attracted great admiration. Mr. Rennie and some other gentlemen bid fair to rank East Lothian among the first breeding districts of Britain. *Our sister isle contributed also to this branch of the show*, in a bull, cow, and quey belonging to Mr. Innes. They have proved valuable in producing rich milk, but their diminutive size must render them of less value for the butcher. Mr. Innes called them the Dexter breed.

Mr. Dickson produced ten Dinmont wedders a cross between a Liecester ram & black-faced ewes. These sheep were very weighty and forward for their age. Mr. Wilson, House of Hill, exhibited twenty black-faced five year old wedders which were in amazing condition—they were reckoned to weigh twenty-eight pounds Dutch per quarter.

In the department for implements, there was also exhibited an engraving and description of the gas vacuum engine.

Mr. Barclay, of Ury, sent a sample of his Georgian oat, and kindly explained to the company its good qualities, which promise to rank it high; a great many demands were made upon him for supplies. Mr. Robson, of Samieside, shewed some very pure perennial rye-grass.

Advantages of frequent Ploughing

The celebrated Agriculturist, M. Duhamel, in his Elements of Agriculture says—

" It is often more advantageous to increase the fertility of land by plowing, than by dung: 1, Because, in general, only a certain quantity of dung can be had, the product of twenty acres being scarcely sufficient to produce enough for four or five; whereas the particles of the earth may be divided and subdivided almost to infinity. The help derived from dung is therefore limited; whilst no bounds can be set to the benefits that may accrue from plowing."

" 2, Few plants raised in dung ever have the fine flavour of those which grow in a good soil moderately dunged. Our kitchen gardens and our other grounds afford daily instances of this truth. Pulse, pot-herbs, and fruit, are seldom so good in the neighbourhood of great cities, where dung abounds, as in country gardens, where but little of it is used.

The corn raised in those excessively dunged lands, yields a great deal of bran, and not much fine flour, and is difficult to keep.—Nice horses will not eat oats of the growth of fields manured with human ordnre. But nothing is so striking as the difference between the wine of an undunged vineyard, and that of vines which have been greatly dunged."

"3, Dung, which is supposed to act by fermentation, causes indeed an inward division of the particles of the earth, which must be very useful, as well as the food which it furnishes to plants: but the plough, besides dividing those particles, changes their situation, and turns the ground upside down, so that the part which was exposed to the influences of the air and dews, takes the place of another part, which is brought from within the earth, up to its surface. The consequence of this is, that well-plowed land is not exhausted by weeds, and that it admits the moisture of rains and dews, together with the rays of the sun, all of which contribute greatly to render it fertile, as has been proved by many experiments."

"4. Dung attracts insects, and those insects gnaw plants. It is well known that the roots of trees planted in dunged ground, are very liable to be damaged by insects; and this is one of the chief reasons why florists banish dung from their gardens. Worms, grubs, and other such like vermin, make dreadful havock in their beds of flowers; and I have seen meadows where the grass has been entirely destroyed by their eating its roots."

"I must add, that most sorts of dung contain a great many seeds, which fill the land with weeds."

"5 It is true that dung is equally serviceable to light lands, and to strong; but the same may be said of ploughing."

"Land is too strong when particles lie so close together, that the roots of plants cannot extend between them, without great difficulty, in quest of their necessary food, for want of which they will remain poor and sickly. But when the ground has been well loosened by repeated plowings, and its particles are set at greater distances from each other, those roots will be able to spread freely on all sides, to pervade every minute chasm, and to collect such quantities of food, as will make the plants grow strong and vigorous.—The friendly influences of the atmosphere will then penetrate to them. What plainly proves the good effects of loosening such soils, is, that their fertility is sometimes increased by a mixture of sand, instead of dung. Now sand does not afford any nutritive substance; but only hinders the particles of the earth from re-uniting too closely."

"Plowing is equally beneficial to light lands, for the very contrary reason; though these do not require so much of it as the other. There is no danger of their being exhausted by any exposure to the sun; but, on the contrary they acquire an additional degree of fertility by the stirring and grinding of their particles, and are thereby the better fitted to receive the moisture of rains and dews, and the salutary influences of the air and sun; whilst their inward pores are at the same time better adapted to the proper extension of the roots of plants, by their being lessened."

"But, let the benefits arising from dung be ever so great, let the means of obtaining enough of it be ever so easy, and let even its defects be corrected as much as can be; still it will not be the less true, that frequent plowing is of infinite service to land."

For this reason it is, that land intended for wheat is plowed three or four times before the grain is sowed. Some farmers, who could not dung all their lands, plowed part of them double the usual number of times, and reaped greater crops from these, than from those which were dunged. The expense of three plowings extraordinary will be much less than the price of the dung necessary for the land, if the farmer is obliged to purchase it.

The Report of Charles Western, Esq. M. P. to Sir Joseph Banks, President of the Merino Society, for which the Thanks of the Society were voted to him.

I send to the show three shearling wethers, candidates for the prize, and, if the markets appear favourable, twenty of the same age drawn directly from the flock; and have little doubt the remainder of the seventy-six will be fit for the butcher by the time it is usual to take off the fleece. In regard to their food, it has been confined to grass, hay, and turnips; and I pledge myself to their having had no corn or cake of any kind; Swede turnips are sufficient for every purpose. I give, in a note annexed hereto, the sale bill of the sheep exhibited at the last show of the society; a few of those, however, were two-shear sheep, and had oats and white turnips, but the Swede turnips without oats are better.*

I know it has been said by some friends of mine, that I keep my stock very high in general, which by comparison with some of our Merino breeders I certainly do, thinking all animals pay better for being well kept; mine are well provided with food from the moment they are dropt until they are slaughtered, but my pastures are always close fed down in the course of the year, and the turnips cleared off the ground by the sheep every where, having no lean stock of any kind to follow them.—I say then, by proper treatment, the wethers of a flock of this breed, after a few years selection and improvement, will be fit for slaughter at about twenty-eight months old; that mine are so; that their weight now is within one stone of what my South Downs, treated in the same manner, used to be, and I think in a few years will be equal. But it may be said what is that weight? I should first ask, how many per cent. would be allowed me to refuse? I know it is the practice of some breeders to speak a little at random if so questioned, and reckon their average weight by what goes to market, taking no account of the refuse which are kept back for another year, or consumed in their own families. Were I to carry every individual wether I have to market, I believe they (being all shearlings) would average seven stone, and that my South Downs, under similar circumstances, would have or rather did average eight stone. If I was to refuse from five to ten per cent. they would average proportionally more, perhaps 7½ or 8, and the South Downs 8½ or 9.

As to their return in money, I declare that I yet can discern no reason why they should not fetch per stone the full average price of the market; I reckon them accordingly; all that I have yet sold have returned me that price: the number indeed has been few, but I have never yet had any complaint or disappointment. Assuming then that I can produce a carcase of mutton in the same time with a South Down breeder for instance, and within one stone of the same weight, I shall with the aid of the wool, return more money even at the low price of the last year. My orders to Messrs. Martin, Coleman-street, have always been peremptory, to sell at the market price, whatever that might be; and this year he sold at 1s. 6d and 1s. 9d. per lb. in the grease. My flock at least those that were bred and fed by myself, have always averaged 8lbs. all round, the wethers rather more, so that I took 12s. per fleece, which at two clips gave of course 24s. for the wool of each wether. Allow to the South Down 7s. each clip, which is full as much as they could produce the two last years, and I gain 10s. to set against the stone of mutton. But where the system of breeding, and feeding the stock so bred, is pursued, the comparative return of wool and carcase must be calculated in another way. A flock of 200 breeding ewes on this plan will necessarily give 500 fleeces every year to sell, and 200 sheep alive or dead to sell; the gain per fleece over that of any other sheep must, therefore be multiplied by 500, and loss in carcase by 200 only: and thus if the value of a stone of mutton is 5s. and the wool only 1s. 6d. per lb. I shall gain £125 by the wool, and lose

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* *May* 9, 1816.			*st.*	*lb.*	*s.*	*d.*	*£*	*s.*	*d.*
Thomas	3	Sheep	23	1	5	4	6	3	4
Pring	1	ditto	8	7	5	4	2	7	4
Shuley	2	ditto	14	1	5	4	3	15	4
Maynard	1	ditto	11	3	5	2	3	18	9
Lover	3	ditto	21	1	5	4	5	12	8
Hayward	3	ditto	23	7	5	2	6	3	4
Chilets	1	ditto	7	6	5	4	2	1	4
Strange	3	ditto	23	7	5	2	6	3	4
Bult	3	ditto	25	4	5	0	6	7	6
	20	heads and plucks ...			...	...	1	6	8
	20	skins ...	0	0	0	10	0	16	8
		fat ...	26	7	3	1	4	2	8
							47	19	1
						Killing, &c.	1	15	0
							£46	4	1

Paid by a draft, sent by post May 21, 1816, on Childs.

Your's, HENRY KING,
Newgate Market, London.

To Charles C. Western, Esq.

only £50 by the carcases. This is an important consideration, and would of course be much more so if the wool bore as good price as it did a few years ago. The year before last I sold my wool at 2s. 9d. and the year before that at 3s. even this sounds a low price for Merino wool, but it may well be imagined that my selection hitherto has been more for the carcase than wool, and my wool, therefore, may not be so good as that of many other breeders, beside that it has always been sold in full grease, and of course, there is immense waste upon it in scouring for use.—Considering the depressed state of the manufacture, I am satisfied with my return for wool, even that of last year, and think it sufficient to sustain any loss upon the carcase I can possibly anticipate.

Notwithstanding this statement appears satisfactory, if not decisive in favour of the Merino sheep, I am ready to confess it ought to be well canvassed by others who will be less partial than its author may be, and that there are a variety of circumstances which ought to be fully considered before any ultimate conclusion can be safely admitted, and which can only be determined by further experience.—As far as mine has gone I have found nothing yet to discourage me. My flock is quite as healthy as my South Downs were, and I have as few casualties; the ewes certainly do not often twin, nor are they good milkers, though they are careful nurses. I see no appearance of their answering to make fat lamb, but this circumstance, I think, is not essential. At present, there is a difficulty in finding sale for the draft ewes, the value of which, of course, must depend hereafter upon the credit of the stock; in the mean time, I find them fatten as quick as any sheep I ever had on the ground, and the barrens that have had any teeth in their head, and often those that have none have been quite fat by shearing time. As to the foot rot, it is very difficult to cure radically the imported sheep, or to get rid of the taint that has been long continued in a flock, but when once accomplished, I think this breed is no more liable to it than any other. I saw four or five flocks in France and Flanders the winter before last, and though housed, they had no foot-rot; in other respects too they were healthy, and had the appearance of being well managed, tho' the improvement of the carcase did not seem to occupy any attention of the breeders.

By what means then is it, I shall be asked, that the Merino sheep make no progress, on the contrary, in so many instances have failed? I believe their failure has arisen from the impatience and inexperience of most of the Merino breeders, many of whom were totally ignorant of the business they had undertaken. In general they seem to have thought it necessary to commence their operations by making experiments of the hardihood of these poor creatures the moment they landed; in other words, trying what degree of starvation they would endure, and how many miles they could be driven to fold.—Such has been the general treatment they have received since their arrival. But the cruelty of the master has not been all: I am not surprised that at their first introduction, they should afford little satisfaction to bailiffs and shepherds, for nothing could be more mean in their appearance; to their care and custody they have been necessarily given, and their treatment such as we might naturally expect. I blame neither shepherd nor bailiff, for their eyes, accustomed to an improved Leicester or South Down, could hardly brook the sight of a poor unfortunate Merino on his first landing, and they might suspect their master did not know the difference; so that as faithful servants they were bound in duty to get rid of them by some means or other as quick as they could.—Accordingly, I have seldom seen a flock of Merino sheep that would not excite the compassion of any human being that was capable of feeling for a brute animal: without exception, all that I have purchased were pictures of absolute misery and wretchedness; nay, I have known some of those sanguine, but now desponding breeders of Merino sheep, themselves ridicule (as well they might) the idea of a fat Merino; and one of them, in the full tide of his wit, published his opinion that it would be no less absurd to think of a fat harlequin than a fat Merino sheep. Why could he not have thought of a fat buck instead of a fat harlequin? He meant, I presume, to ridicule the idea of expecting activity and aptitude to fatten in the same animal; but a moment's reflection, or at all events the sight of a fine haunch of venison, might have convinced him that so far from these qualities being incompatible, the most agile of beast and bird are generally the most disposed to fatten quickly; even the hog, fat to a proverb cannot be said to want agility; they are very fleet in their lean state, and capable of travelling far and working hard to gain their subsistence.

IMPORTANT TO FARMERS

Having Mills or Kilns.

By act of Parliament, passed in the year 1816, it becomes necessary for the occupiers of Mills and Kilns to have them registered according to law, under a penalty of fifty pounds for the former and ten pounds for the latter, in case of neglecting those requisites. Within the districts of Londonderry and Coleraine, several individuals have already suffered for such neglect, and as the government has determined to enforce the due observance of this law, the penalties struck against them have seldom been mitigated.—Besides the forfeiture of the above penalties by the proprietors, all grain found in such unregistered Mills and Kilns becomes liable to forfeiture, and may be seized by any revenue officer, and sold by public auction. As numerous instances of this kind have lately occurred in this neighbourhood, by which many persons, through ignorance, have lost their grain, it becomes necessary to warn the farmer of the consequences, and also to point out the method of obviating such consequences. To have a mill registered, requires two securities, worth fifty pounds each, who enter into a bond before the Collector of Excise of the District in which such Mill is situated. The object of this security is to bind the parties in the above sum not to allow any illicit malt to be brought into or ground in the said mill. These bonds are found ready prepared with the Collector of Excise, and nothing else is requisite on the part of the proprietors than to serve a notice on the collector, and pay the price of the stamp, ten shillings and ten pence. The form of notice is the same for either mill or kiln, but no securities are required for the latter, nor is there any expense whatever attendant on the registry of a kiln.—The following form of notice, written on a plain slip of paper and signed by the proprietor will answer the purpose, taking care to have a duplicate, as *two* notices must be given to the Collector.

Take notice that I keep a Mill (or Kiln) for the purpose of grinding (or drying) corn or grain, situated in the Townland of   Parish of   Barony of   and County of   which you will please register according to Law.—Given under my hand this   day of   182

To the Collector of Excise, &c. &c.

On one of these notices the Collector certifies the due registry of the Mill or Kiln, and the proprietor keeps it in his possession for the inspection of any officer who may call for it. The last requisite is, to have the owner's name painted either on the door or on a board put over the door of the Mill or Kiln, as the case may be, in oil colour, and letters four inches long.

Premiums given by the Linen Board for cleaning and making up Flax for sale in the market of Londonderry—Dec. 15, 1824.

Thomas Gibson, 1st premium	...	£2	10	0
John Long, Cumber, 3d do.	...	1	10	0

For want of sufficient merit, the other three premiums were withheld from the following competitors:—

William Latta, Taughboyne; William Barnhill, Rye; Ann Lavens, Templemore; and John Cather, of Cumber.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	13	9	*pr cwt.*
Oats	...	0	10	–	0	9	*pr st.*
Barley	...	0	12	–	0	13	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3½	–	0	5	*pr lb.*
Mutton	...	0	3½	–	0	4	
Veal	...	0	5	–	0	7	
Butter	...	0	9	–	0	10	*pr 18oz*
Firkin Butter,	*1st*	101	0	–	100	0	*pr cwt.*
Do.	*2d*	95	0	–	0	0	
Do.	*3d*	85	0	–	0	0	
Flax undressed		37	0	–	54	0	*pr cwt.*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	41	0	–	65	0	*pr cwt.*
Pork	..	41	0	–	45	0	*pr cwt.*

⁂ The Corresponding Committee having inspected the Accounts relating to the Magazine, according to a resolution entered into at the last General Meeting, find that several subscriptions remain still unpaid.—The Committee request that all such outstanding debts may be discharged, without delay, in order to enable them to make out their Report.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.
Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton.
by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. III.—NO. 6. WEDNESDAY, 29th DECEMBER, 1824. Price 2d.

On raising small Fruit Trees from Seed.

(From the Irish Farmers' Journal.)

SIR—Communications on agriculture or gardening are particularly interesting, when they come before the public at a time when any experiments they recommend may be generally tried, and in this respect my present letter may not be unacceptable to your readers.

Having for some years observed the difficulty of obtaining and preserving good kinds of gooseberry and currant trees by the ordinary method of cuttings, I was induced, in 1819, to sow the seeds of some different varieties of those fruits, conceiving that if I chanced to obtain a few good plants, they would be more likely to flourish in their native soil, and to produce better than strangers, and also would be less liable to run out, as the phrase is, or deteriorate in health and quality of fruit year after year.

Under these impressions, having prepared a seedling bed, slightly manured with the cleanings of a pigeonhouse and the scourings of a drain which led from a laundry, (preferred on account of the fertilizing properties communicated by the soap suds to the mud,) I sowed in drills about two ounces of white currant seeds, and the same quantity of red and black, in the beginning of March. In May they were overground and very thick —this I expected, and accordingly thinned them considerably, leaving fifty of the best looking and straightest of each kind. They attained in that year the average height of nine inches—the black were the most luxuriant. The following autumn I planted them out in rows at about eighteen inches asunder, and allowing an interval of only a foot between each tree, as I intended to keep them low until their produce should decide their respective merits—and although it is the general custom among experienced gardeners to dig in manure about the roots of small fruit trees, yet I never had the soil stirred about them, except superficially with the hoe, to keep them free from weeds, and they had the benefit of that manure only which was put in the ground at the same time with themselves. In the spring of 1822, some of the black currants shewed blossom, which I did not suffer to remain. In the following year the black bore abundantly; but there were not more than half a dozen trees which might be pronounced decidedly good—the fault was not in general in the flavour, but the fruit was small and insignificant. A few blossoms on the white and red kinds were nipt off in the early part of the season.

This year the trees are in very good bearing, particularly the white, of which there are seventeen very fine trees, one especially, of fine amber coloured fruit, much agreeing in appearance with the "*ribes Banksia,*" in the transactions of the Horticultural Society of London for 1823, but of a peculiar rich flavour, and in every respect decidedly the finest white currant I ever saw. The red have turned out but very indifferently—the fruit is in general small, and has too much acid in the taste; there are but four trees of this variety at all worth retaining in cultivation.

I sowed some seeds of gooseberry of different kinds in the spring of 1820, they have as yet shewn no signs of bearing; and I do not suppose that they will afford a favourable result, as their leaves are small and the prickles very thickly set, which is seldom the case in bushes which produce good fruit.

In the gathering of the fruit from which the seeds were saved, no discrimination was observed as to their situation in respect to other varieties—they were mostly chosen from trees trained against a wall, on account of the size of the fruit being a trifle greater than that on standard, and there had been no interference whatever with the blossom, such as introducing foreign pollen, or depriving them of stamens, &c. and no means except cutting resorted to, to force the plants into bearing. In fine, I have been perfectly satisfied with the experiment, as in addition to the amusement afforded to me, I have acquired a number of excellent trees, reared on, and therefore more congenial to the soil for which they are intended. Yours, &c. P. D.

ON MANGEL WURZEL.

(From the Irish Farmers' Journal.)

Sir—I have remarked with genuine satisfaction, that the public mind begins to feel an increasing interest in favour of this valuable root, and that some of your remote readers have been soliciting information, while others have presented a partial account of their mode of culture, and preservation.—Without presuming to impugn their plans, I take the liberty to request your indulgence in giving publicity to mine. It was my good fortune to be introduced to the knowledge of this plant in 1811, since which I have tried it on a large scale, with the exception of one year, when, like many others, I was alarmed at the cautious but ill-founded verdict pronounced at Holkam, respecting the supposed deleterious effects of it upon cows. Quickly, however, emerging from error, I resumed my operations, and find not only no cause to repent, but in every sense of the word I have the weightiest reasons for exulting in my perseverance.

As it would be difficult to condense all that might be said on this interesting subject, within the space that could in modesty be requested from your columns at one time, I propose to arrange my remarks in three letters, relying on your indulgence for the insertion. The first to contain the *peculiar* advantages which attends the cultivation of mangel wurzel—the second to describe the practice I have adopted, and success I have experienced during the last thirteen years—and in the third, to describe the most advantageous method of consuming the leaves, of storing the roots, and of applying the crops generally.

Conformably to this arrangement, I proceed to speak of the *peculiar* advantages which attend the cultivation of mangel wurzel, which I reduce under the five following heads:

1st. Land totally unfit for turnips is well adapted for mangel wurzel.

2nd. The fattening qualities of the root are of the highest order.

3d. The certainty of procuring a full crop.

4th. The comparatively imperishable property of the root.

5th. State in which the land is left for succeeding crops of corn.

First. Wherever the land is too heavy either to permit the turnip to flourish, or to be carted off when produced, or to bear the tread of cattle, there the root delights, and may with advantage be cultivated. The benefit which might result to farms entirely composed of good heavy land, is obvious to every one who has made the trial—and it would not exceed the boundary of truth to assert, that wherever the cultivation is undertaken and followed up with spirit, an incalculable increase in the value of the rental will immediately commence.

Second. The root is now generally allowed to stand eminent for the excellence of its fattening qualities. Among our field productions, parsnips and carrots may justly be declared more nutritious. Swedish turnips as holding a divided empire with it, while white turnips, cabbages, and potatoes sink into insignificance before it. The taste both of the leaf and root is most grateful to every description of stock—bullocks, sheep, and hogs, instinctively lay hold of them, and when once accustomed to the flavour, they reject every other sort of green food, if they have the election.

Third. It is too well understood how precarious is eventual success in the cultivation of turnips, even under the most spirited and judicious management. The drought, the fly, the wire-worm, the mildew—and even when all these foes are surmounted, a Christmas frost has often brought on a general decay, causing whole counties to resound with the bellowing and bleating of half-fed cows and starving sheep. This distressing consequence will positively be avoided by the farmer who resorts to mangel wurzel. It has no known enemy to contend with, except the supineness of the occupier. If the seed be sound, and sown in the proper season, the plant will appear in five days—if the tillage be good and the manure sufficient, it will grow with rapidity; thrive without rain under a cloudless sun, and leave the owner no anxiety but to use his hoes liberally, to devise the cheapest means of protection, and to adopt the most profitable method of consumption.

Fourth. No edible root has yet been

brought into use which has an affinity to the one under consideration, with respect to its imperishable properties.† It is not only ready for use in the autumn, the winter, and the spring, but may, if required, be continued during the whole summer with unabated advantage: and in the following autumn it will be found in full possession of its most valuable qualities, undiminished in weight, and abounding in saccharine juices.

Fifth. It needs not be insisted on, that whenever turnips are drawn from heavy land in the spring, it is not in every season that the soil can be rendered sufficiently dry and tender in time to secure a good crop of oats or barley. The cultivators of mangel wurzel are exempt from all apprehension on this score, for with them all risk entirely subsides. The roots having been produced on the ridge, and carted in autumn—immediately after wheat sowing, the ridges are split, and water furrows formed and scoured—thus the land will lay perfectly safe and dry all winter, while the greatest possible surface will be exposed to the operation of the frost, which will penetrate and destroy the race of grubs and wire-worms. The land thus formed will be ready for spring corn a month before turnip land could be got ready, which, if not visible in the stack-yard in the shape of straw, will amply increase the weight and measure of oats and barley. Such management as this will indisputably be allowed the acme of perfection in husbandry.

It would be very easy, sir, to augment the grounds upon which I have presumed so strongly to recommend my brother farmers to seize a neglected treasure. If what has been adduced in recommendation fail in creating a more general inclination to make trial of its value, I should despair to produce conviction by any more powerful arguments.—My remarks respecting it are made in full sincerity of heart—they are the result of experience, and an honest conviction of its utilty, which I dare prophecy, will, like the once despised Swede, be in the end triumphantly established.

AGRICOLA.

To the Editor of the North West Magazine.

MECHANICS' INSTITUTION.

MR. EDITOR—It may to some persons appear premature to suggest the propriety of of establishing *a Mechanic's Institution in Derry,* when only one has as yet been formed in Ireland—but when we find that most towns, and even many villages in England and Scotland have already got them, the surprise rather may be, that a place of such population and intelligence should still be without one. It may also, possibly, be objected, that funds sufficient could not be raised in Derry to support an institution of this kind; but to obviate this, in some degree, I would propose that the Lecturer shall be allowed to visit all the principal market towns in the counties of Derry, Tyrone, and Donegal, at stated periods; by which arrangement the entire N. W. District might be enabled to enjoy the advantages of an institution conveying instruction in a form at once beneficial and delightful. For, by thus opening to the population the phenomena of nature, a new direction will be given to the public mind, from which the most beneficial consequences may be expected to flow. In a religious point of view, its advantages are incalculable—for what can more expand the faculties of man, or raise his admiration of the Deity, than to know the laws by which he regulates organised matter—to view him through the mysteries of his glorious works—and to ascertain that what appears to the rude and uncultivated mind a mass of confusion, or at best but regulated by fortuitous causes, is the result of a system of the most beautiful arrangement, putting to scorn the most curious exhibitions of human ingenuity. It has been well and truly asserted, that no one who has studied the anatomy of the human frame, or the structure of the heavens, can ever be an atheist. In elevating and expanding the intellectual powers, the consequences to general society are most precious, while to the artisan its benefits are so obvious, as to require no illustration.

In a time, thank God, now gone by, the education of the lower classes found many opposers, under the notion that it would tend to render them worse subjects of the realm.—But such opposition arose from a very nar row view of the human mind, for it might have occurred to those persons that the more the intellectual powers of an individual are cultivated, the more will reason operate and govern his actions—and surely it is not by acquirements that enable us to add to our comforts, that men are to be rendered more discontented with their situation in life, neither is it to be feared, that by the general mind becoming more accomplished, individuals will become more saucy or vain, we may indeed conceive a society to exist in which the knowledge of the merest rudiments of learning might prove a source of vanity, but be it remembered, that whatever is universal must cease to confer any pre-eminence on its possessor.

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† The white turnip is in March entirely divested of its fattening power—the Swede in May becomes shrivelled, and is almost rejected by cattle—the potato after this time sprouts away all its vigour, diminishes in bulk, and dries up—but not so the mangel wurzel.

It has been well observed by one of our most classic authors, "that a well educated nation is as superior to a rude one, as the accomplished *gentleman* is to the *boor*— Wishing that some philanthropic member of the N. W. of Ireland Society, (for it is intimately connected with their views,) may set on foot a plan for such an useful institution, I remain, &c. &c. COLONUS.

To the Editor of the North West Magazine.

MR. EDITOR,

If the subjoined extracts from a late publication appear suitable to the nature of your paper, please to insert them. The work from which they are taken was printed in 1822, and is entitled "A concise view of the origin, constitution, and proceedings of the Honorable Society, &c. commonly called the Irish Society." Towards the close of the vol. is a Narrative of a Journey to the North of Ireland in the year 1802, by Robert Slade, Esq. Secretary to said Society.

The following passage is the effusion of a humane mind, and will be read with great interest. Mr. Slade landed at Donaghadee, whence he set out for Londonderry, and the appearance of the country drew from him the following observations:—" The first notice I received of my arrival on lands belonging to the Londoners (as they are called) was at Kilrea, a market town situated on an eminence near the river Bann, which I learned from the landlord of the inn, was held by Mr. Stewart, uncle of Lord Castlereagh, under the Mercer's Company, and that it extended for more than six miles along the road over which I was to pass in my way to Londonderry. Inquiring into the reason of the want of accommodation and the apparent poverty of the place, the master of the inn observed, "that it could not well be otherwise in a part of the country where they never saw the face of the owner of the soil, or even his under-tenant;" and he mentioned this circumstance as a grievance which greatly prevails in Ireland, but particularly in all those parts situated in the north of the island which belong to any of the city companies.* I felt the force of the observation, which impressed me with a greater degree of indulgence for the poverty, ignorance and laziness of the lower order of the people, who toil for a miserable subsistence, and see the fruits of their labour carried off from time to time by an agent of their landlord, to be spent in a foreign country; while the very same description of people in England, are cheered by a hospitable reception in the hall of their landlord, when they wait upon him to pay their rent, derive benefit from his expenditure and example, and in case of petty disputes, find an honest magistrate, a kind landlord, and a well informed neighbour to reconcile their differences, and prevent little misunderstandings from growing into rancour and the desire of revenge. This want of example, assistance, and consolation from the resident land owners, deprives the inhabitants of all inducement to union, so that each family lives by itself in a little cabin without a chimney, with a clay floor and bed of straw or rags." It is not very obvious what the writer means, by attributing the want of union among the Irish tenantry to the absence of the Landlords. There is a species of union to which they sometimes have recourse, not that I suppose which is alluded to, combination against the laws, and against the supposed authors of their misfortunes or sufferings. The residence of landlords more in the English style so well described, would rapidly infuse a kinder spirit, in men who may be now brooding over their woes, and nursing wrathful passions, the union for evil purposes would not be countenanced nor thought of—the charities of life would expand, and union for good purposes would follow. The North West Society presents a centre of union, and its members are the ministers of peace. Their operations in some measure counteract the evils of absenteeism, and by so doing, the seeds of "rancour and revenge" have no ground wherein to strike root.*—There is another kind of union indeed of which there is nodeficiency, the conjugal—"A groupe of nearly naked figures are often seen at the doors, consisting of the wife and children. The husband finds the means by working at his loom, to pay an extravagant price for four or five acres of land, on which a cow is kept for the family, and some potatoes and flax are grown. This with a turf fire, kindled in the corner of their cabin, round which the family crouch, with some oatmeal for stirabout constitutes all the wants, and whiskey the luxury of the Irish peasant, *who, never looking beyond it, has no temptation to enterprise or exertion.*"

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* There is reason to congratulate the country that a very desirable change has taken place since our author wrote.

It is evident from the manner in which Mr. Slade commiserates the condition of our peasantry, and his suggestions for their improvement, that his charity is not of that barren kind which would enter the hut of poverty where it creeps over the half dying embers, and departs saying, be warmed, be clothed, be filled, without giving the needful supplies to procure those comforts. There are no doubt many individuals connected with the Irish Society animated with the like good spirit, and now, that their estates are to so great an extent fallen into their own hands, the state of their people is likely to receive that kind and generous consideration, which they so much required. Improvements to a large extent have, I understand, been made in several of the proportions.—My knowledge does not enable me to say whether in general, their expenditure is likely to produce permanent advantage—above all whether the leases given to the tenantry be of such a kind as to create that spirit of improvement, and to reward that persevering industry, which should be, and I am confident is in fact the ultimate aim of these proprietors.

X.

TURNIPS.

Mr. Editor—As you have expressed a wish in the first number, of the present volume to receive any communications interesting in agriculture, I beg leave to transmit two extracts, one from an English, the other from a Scotch paper, relative to the cultivation of turnips, which are well worth the attention of our farmers being the result of actual practice, therefore better in my opinion than volumes of theory. Your's, &c.

AGRICOLA.

It has already been noticed that a farmer (Mr Alexander Dennistoun) has a fine field of Swedish turnips, on his ground in the parish of Cathcart, cultivated in the way practised and recommended by Mr Cobbett. He selected a field containing about three acres of an excellent dry light free soil, bottomed on whinstone. He broke ground at Martinmas, then ploughed it across with a common iron plough, drawn by four horses—next up and down—and afterwards, formed his drills at two bouts, four feet asunder. The seed was sown on the 6th April, one part in a field near Mr. Dennistoun's house, and another in a place farther up the Cart, beside Wilkie's lin. They were transplanted, and placed exactly a foot distant, about the middle of June, at the time of the severe drought. The ridges were afterwards pared and set up in the usual form. About a month ago, the field had a fine and highly interesting appearance, the shaws were strong and vigorous, rose to a great height, and completely covered the soil. The field has been examined by the lovers of agriculture from a considerable distance, and all who have seen it have been deeply interested with the sight. "I didna think it possible to raise sic neeps," said an old farmer, "and I believe nane in the parish ever saw the shaws, shaking hands wi' drills four feet frae ither." Sir John Maxwell, Mr. Maxwell, Mr. Stewart, and several other intelligent agriculturists have expressed their astonishment at the bulk of the crop, and their approbation of the plan on which they have been cultivated.—Six turnips, pulled in succession from a drill chosen at random, weighed on an average 8

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† The liberal support given by the London Companies to this Institution are an unequivocal proof, of the estimation in which they hold it.

pounds, tops and roots. There will be 12,000 plants on the acre, yielding a produce of 40 tons, tops and roots included.—*Kentish Gazette.*

A part of the lands of Motherwell cultivated by the spade, has this year produced yellow Aberdeen turnips, which the manager estimates at 30 tons per acre, exclusive of tops. They were sold on the field at the rate on an average of £15 per acre. One acre went as high as £23.

We lately mentioned Mr. Dennistoun's excellent crop of Swedish turnips, cultivated according to the method of Mr. Cobbett.—In a field almost adjoining, there is a crop still better, which were raised by Mr. William Warnock, in the usual way. The distance between the drills is 28 inches, and the plants are nearly 11 inches asunder, or 20 in 18 feet. They were sown on the 28th May, and were thinned with the hoe, and pared and set up with the plough according to the ordinary practice. It was meant to leave them 10 inches asunder; but this method does not admit of the same exactness as transplanting.—The Scottish acre would, therefore, contain 26,356 plants, and the English 20,740. The field in question, consisting of about half an acre, was examined on Saturday, and the average weight of each turnip, with the top, was found to be 4¼ lbs. at the rate of 50 tons per Scottish acre, or 39 tons 17 cwt. per English acre. Without the top the root weighed 3 lbs. 10 oz. at the rate of 42¼ tons per Scottish acre, or 33½ per English acre. This crop is therefore one-fourth larger than Mr. Dennistoun's.

Mr. John Ronald, Tit Wood, on the estate of Sir John Maxwell, has a field of red topped turnips, in drills, 28 inches asunder, and the plants, in consequence of deficiencies, at 18 inches distance. They were sown at the beginning of June, and after thinning, were repeatedly dressed with the plough. The average weight of the turnip, including the top, is 12½ lb. at the rate of 88 tons per Scottish acre; without the tops, 9 lb. or 68 tons per Scottish acre, or 50 tons per English acre. Three of the largest turnips have been sent to our office, they weigh without the tops 28½ lb. 25 lb. and 24 lb.—*Glasgow Chronicle.*

Mr. Greg thus states the advantages of the system pursued by him, as contrasted with the common practice.

1. A plurality of ploughings, which expose the land to be impoverished by a summer sun;
2. The unnecessary expenses of these ploughings, as far as they relate to labour;
3. The wear and tear of horses, ploughs, harness, &c.
4. The rent and taxes of one year without return;
5. The inefficiency of summer ploughing to destroy weeds propagated by seed, twitch excepted;
6. The deprivation of turnips to the amount of thirty acres;
7. The little stock they are enabled to keep;
8. The deficiency of manure arising therefrom, and the impoverished state to which that little is reduced, by bad management;
9. The expense they are subject to, in order to supply this deficiency;
10. The deficiency in the crops of oats, pease, and beans, which lateness of spring-ploughing occasions;
11. The abundance of annual weeds they raise within the influence of the air to vegetate, and the impossibility of cleaning those crops.

As I shall have occasion to remark particularly upon the above, in forming the result, I shall proceed to explain a system without the fruitless operation of summer fallows; simple in its management, scientific in its practice, and productive in its effect.

Having established in my mind as a general principle, that fertility was to be derived from pulverizing the soil, clearing it from water, and keeping it clean, I proceed to inquire how those objects were to be obtained at the least expense. I found that the best method to promote them was to reverse the whole system. I have already explained,

I plough once for a crop.	They for one crop four and a half times for the once.
I only plough in winter.	They only in summer, and spring.
I never fallow the land in summer.	They one third every year.
I practice row-culture.	They broad cast.
I horse and hand hoe, at the expense of 5s. 6d. per acre.	They only slightly hand-hoe, the expense 2s per acre.

The land I occupy is a very tenacious clay, in some places mixed with calcareous earth: this naturally causes it to bind at top after heavy rain. It is only troubled with surface water; and from the length of time the county of Herts has been in cultivation under very bad tillage, the soil is impregnated with weeds of every description. If you dig a pasture which has remained undisturbed for centuries, almost every variety of weed will immediately appear. My object was therefore (it being almost hopeless to subdue them) to prevent their injuring the crops. To meet the general principle upon which I set out, I began to plough my land as soon in the autumn as the wheat is sown, commencing with that which is the wettest. But previous to that, I mark it out by a very simple instrument, no more than a beam of the length of five feet and a half, with a peg at each end which fixes on a drill carriage: that operation is followed by a plough, which ploughs a bout in each furrow, to the depth of four inches.—The marking is performed by a man, a boy, and a horse, at the rate of ten acres per day.

The bout is ploughed by a man, a boy, and two horses, at the rate of five acres per day. This work is performed by the man who sows the land; for upon the accuracy of this work, the facility and success of every subsequent operation depends. The size of the lands being thus laid out, the most ignorant ploughman can complete the work.—The ploughing is performed by a Suffolk swing plough, with cast Iron breast, and wrought iron share, upon a construction to form a perfect trench of seven inches deep, and eight wide. This requires four bouts to complete a land of five feet and a half. A sketch is herewith given to elucidate the shape and extent of the land only marked, also when formed into a land, by which it will be observed that each land exhibits a convex bed of fifty-six inches; but when prepared for sowing, the operation of scarifying and harrowing expands it to five feet to receive the seed, and to every two lands a furrow, or horse-path of ten inches. In the drawing also, the earth at the bottom is removed from the bed, to show that land, when accurately ploughed, will exhibit a proportionate convexity with that of the surface, describing an inclined plane, from the centre of the land to each furrow of three inches. Thus water is prevented from remaining upon the land intended to be cropped, by being drawn into the ten inch furrow: to give rapidity to its progress through and off the beds, the outside bout of each land is ploughed two inches deeper; and from thence the water runs into cross furrows, which are dug with a spade still deeper.

In ploughing this land in the autumn, or before Christmas, there is obtained by the influence of the frost during the winter, a perfect friability in tilth to the depth of the ploughing; and by the soundness of the ploughing, the surface water may be as effectually got rid of, as by under-draining; which is usually performed at an expense of £3 per acre, before the heavy lands in my district can be rendered productive. Having thus produced friability by the aid of frost, and released the land from tenacity at bottom by taking off the water, it is in the spring in a state for sowing, whenever favourable weather arrives. I will now take up the land in the spring, when I begin to sow beans. I flatten the lands, which lay very round in the winter, and loosen them at bottom from the under stratum. I have an instrument of great power, a scarifier. It is drawn by 4 horses, and completely prepares the land for the seed at each bout. This is not the only advantage of it; for it again disturbs and lacerates the top-rooted weeds, which are reversed by the plough in the winter, and does not in its operations raise any seeds within the influence of the atmosphere to vegetate amongst the spring crop; the harrowing before and after the drill, having in a great degree destroyed the effect of such seeds as the plough turned up to the surface in the winter.

In the hope that I have explained to your satisfaction, that by early ploughing I obtained friability, and by its mode removed the inconvenience of water, I proceed to explain, why I prefer five and a half feet lands, to other dimensions. I discover that the water can be got off at that breadth; that it conforms to the run of all carriages; the scarifier sufficient to embrace that land is not unwieldy; and the drill takes two lands at a bout. As the horses, after the land is ploughed, never tread but in a furrow, and any other distance would not unite so many conveniences.—There are these additional advantages; the land is only ploughed once, and by taking a depth of seven inches, two soils are thus alternately brought into cultivation. The roots of white corn or pease do not employ above four inches of soil for their support: therefore there are three more in reserve, in a state of rest, sheltered from the sun, to be brought forth for the succeeding crops. The land being ploughed in winter, I have only sowing to execute in spring, for which I can choose a very few days that are most favourable.—The spring corn being sown, I have not an acre of land to plough, until the wheat seed commences; and after the scarifier and harrows have prepared the land for turnips, the few horses I have occasion to keep are fed upon green meat: a saving in corn to a great amount is hereby derived. Two steady horses for sowing the turnips, and hoeing the corn, are all I employ. After this the ploughmen and horse keepers are employed in cutting grass for hay, hoeing turnips, &c. &c.

(To be continued.)

Premiums given by the Linen Board for cleaning and making up Flax for sale in the market of Londonderry—Dec. 22, 1824.

1st Premium of £2 10s. to Patrick Bradley, of All-Saints, for 3 cwt. of flax scutched at Monglass mill.
2d Premium of £2 to D. Brown, of Ballyarnet, for do. scutched at Ardlough mill.
3d Premium of £1 10s. to Thomas Ross, of Glendermot, for do. scutched at do.
4th Premium of £1 to Thomas Gibson, of Cumber, for do scutched at Dungarven mill.
5th Premium of £1 to Alexander Noble, of do. for do. scutched at Lismacarrol mill.

The unsuccessful candidates were Robert Smiley, of Templemore, scutched at Imlack mill, and James Lamrock, of Cumber, scutched at Cumber mill.

We are happy to observe, that a material improvement has taken place in the market, since last week, but more particularly in the flax shewn for the premiums, some of which sold at the advanced price of 63s. per hundred.

CHALLENGE.

Sir Robert Bateson proposes to show, at the next October Meeting, Mr Warner's improved Short Horned Bull, against any Bull that Sir George Hill can exhibit against him, for five Guineas.

ROBERT BATESON.
G. F. HILL,

FAIRS,

December 30—Stewartstown, Trillic, Tyrone. 31—Benburbe, Tyrone—Rockcorry, Monaghan. January 1—Ballow, Down—Castleblaney, Monaghan—Castledawson, Lisane, Derry—Castledergh, Fintona, Stewartstown, Tyrone—Redcastle, Donegal. 2—Dromore, Sligo—Middleton, Armagh. 3—Cross, Mahoolan, Derry—Fredericktown, Moy, Tyrone—Letterkenny, Donegal. 4—Ballinode, Monaghan—Cookstown, Manor-Hamilton, Tyrone. 6—Altmore, Gorten, Tyrone—Crumlin, Antrim—Monaghan town—Balnaglera, Armagh.

CURRENT PRICES IN DERRY.

Oatmeal ...	13	0	*to*	13	9	*pr cwt.*
Oats ...	0	8½	–	0	10	*pr st.*
Barley ...	0	12½	–	0	0	
Potatoes ...	0	2	–	0	2½	
Beef ...	0	3½	–	0	5	*pr lb.*
Mutton ...	0	3½	–	0	4	
Veal ...	0	5	–	0	7	
Butter ...	0	9	–	0	10	*pr18oz*
Firkin Butter, 1st	96	0	–	0	0	*pr cwt.*
Do. 2d	95	0	–	0	0	
Do. 3d	85	0	–	0	0	
Flax undressed	38	0	–	60	0	*pr cwt.*
Five hank yarn	2	9	–	3	4	*pr spl*
Four do. do.	2	7	–	2	10	
Three do. do.	2	8	–	2	11	
One do. do.	2	6	–	2	8	
Hides ...	41	0	–	65	0	*pr cwt.*
Pork ..	41	0	–	45	0	*pr cwt.*

⁂ The Corresponding Committee having inspected the Accounts relating to the Magazine, according to a resolution entered into at the last General Meeting, find that several subscriptions remain still unpaid.—The Committee request that all such outstanding debts may be discharged, without delay, in order to enable them to make out their Report.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N.W. SOCIETY'S MAGAZINE.

VOL. III.—NO. 7. WEDNESDAY, 5th JANUARY, 1825. Price 2d.

To the Editor of the North West Magazine.

SIR—Having been some weeks from home, and my attention occupied in other matters, prevented my attempting to answer some of the queries in your Magazine of the 10th of last November. Should you deem the answers to the queries, or the concluding observations to be of any public utility, or worth your notice, or that of the Society, my object will be answered. I would beg leave to impress upon the Society, the great public advantage that would probably arise from the establishment of a good market for the sale of wool, at Derry, to which probably English buyers would resort, and it might be hoped that in some years we would be able to manufacture a portion of it ourselves.—I am, Sir, your obedient servant,

A FERMANAGH FARMER.

Q. 1. Whether is it most advantageous to the State, that land should be cultivated by proprietors; or that a right to cultivate the soil should be assigned for a limited time, to other persons, upon certain terms, presentations, and reservations?

A. Wherever the proprietors of the ground will apply themselves to the proper cultivation of it, they have so many advantages over a person to whom it shall be assigned, for a limited term, that they can cultivate it in a much more beneficial manner to themselves and the state; but, as the proprietors of large estates cannot do this, the next best mode will be to let the grounds to tenants of good character and industrious habits, who shall be bound themselves to occupy the farms, making in every instance, the subletting or dividing the farms, except as a provision for a wife or child, a forfeiture of the lease.

Q. 2. By which class, proprietors or tenants, have improvements been most generally introduced?

A. By proprietors generally, who cultivate their own farms, their ability to expend the money necessary for stocking a farm, procuring proper implements, seeds, &c. being much greater than that of the generality of tenants, though sometimes the reverse is the case, it being the tenant's interest to make the lands as productive as possible, to enable him to live comfortably, and pay his rent when due; for, many proprietors not being under the necessity of making exertions to support themselves and families often become indolent.

If the proprietor shall be paid two thirds of the clear nett proceeds of a well cultivated farm, after deducting every expense, such as the keeping the houses, fences, gates, &c. in repair, keeping up the stock brought to the farm, the implements of husbandry, and every expense attending the cultivation and sale of the produce, we ought to be satisfied.

Q. 4. Whether is it conducive to the public good, that restrictive covenants should be laid upon tenants? and if these are for the public good, to what extent should they be imposed?

A. No restrictive covenants or duties, whether work, or fowls, or fees, ought to be inserted in leases, except that of subletting, which is the ruin of both proprietor and occupier, by introducing a pauper population into the country and upon the farm.

Q. 5. What is the most proper size of an arable farm, where the growing of corn is the chief object, and the grass system only considered as meriting secondary attention?

A. No tillage farm ought to be less than fifty acres, and might with great advantage to both proprietor and tenant, be extended, in many cases, to two hundred acres.

Q. 6. Whether are small or large farms most for national advantage, holding in view the interest of proprietors, the comfort and welfare of the tenants, and the benefit of the State?

A The very smallest farm ought not to be less than twenty acres, and no cottiers allowed on any account.

Q. 7. Does the size of a farm affect the population of the country, under similar management? or, does the number of people upon a given spot of ground, depend upon the system of husbandry adopted? that is to say whether the land is principally kept in pasture or tillage, and whether improvements are neglected or practised.

A. If the present superabundant population of the North West of Ireland, whether mechanics or labourers, were placed in different small villages, eligibly situated, convenient to a bog or coal pit, with one acre of garden ground to each house, which ought to be covered with slates or tiles, as the occupiers would have no means of procuring thatch, and the remainder of the ground let to industrious tillage farmers, with sufficient capitals, at reasonable rents and good leases, the situation of the mechanic and labourer would be greatly improved, and the farmer would have a more certain market for his produce, and the industrious intelligent farmer would not be driven to emigrate to America, as too many of them now do.

Q. 8. Has the condition of the labouring peasantry been meliorated within these fifty years? It is not meant here to enquire, whether wages have been raised; but, whether are they better fed, better clothed, and more comfortably accommodated?

A. The situation of the labouring classes of the community is much worse now than it was 50 years ago, the mechanic or labourer is not nearly as well fed or clothed as he was then, the only improvement is, that their children are better educated.

Q. 9. Whether is it most for the public good, that the ground should be ploughed by horses, or by oxen, holding in view the original outlay in purchasing the stock, the expense of supporting each kind, the quantity of labour they are capable of performing and the value of the animals at the latter end? The attention of those who work, or have worked oxen, is particularly requested to this question.

A. By oxen, if the farms are large and the farmer has a sufficient capital, as more ploughs, carts, &c. must be employed owing to the slowness of the animals: but the original cost being much less and oxen not requiring the same care or so expensive food, and not so liable to be injured by the abuse of servants or from their neglect, and their carcases being very valuable after some years work, if properly fatted, and in case of injury in limbs, sight or otherwise, being properly fed would turn out to good account, when the horse in any of these cases would be of very little value.

Q. 11. If land is exclusively kept in grass, Whether is the State equally benefited, as if aration was occasionally introduced?

A. In a manufacturing country, like ours, the land being under tillage, is much more beneficial to the state, as you secure a sufficiency of food for your own people, more taxes are paid by an increased population, whose industry is thereby encouraged, and if live cattle can be imported from the continent, (instead of being reared at home on the best of our ground, which is generally the case in Ireland) a great quantity of raw materials, such as hides, fat, &c. is brought into the country, and if these articles are again exported, in a manufactured state, the wealth of the country is greatly increased, employment given to your people, and a greater number of both ships and sailors engaged, which ought to be always a primary object with our government.

Q. 12. Does grass land improve, when kept to a great age? and if it does, is the improvement equal to what may be gained from breaking it up, fallowing it after a few crops, and sowing it down with fresh seeds?

A. The occasional breaking up of grass lands, sowing it with fresh seeds, and letting it out again, greatly improves it, provided the ground has not been too much exhausted or impoverished by tillage, but let out in good condition.

Q. 13. If land is kept in grass, which is the most profitable way of stocking it, with cattle or with sheep? If with the former, whether is the large or small kind most advantageous? If with the latter, whether is the short Highland sheep, or any of the varieties of the white-faced kind most profitable?

Any answers to this question should be regulated by the soil, climate, and situation of the farm, and by the demand afforded at the contiguous markets where the stock is to be re-sold.

A. Cattle and sheep, if fed on the same farm, will both give a greater profit than either separately, as in most farms there are particular kinds of grasses suited to the palate of each of these animals, (and the proportion of each kind of stock to be laid on, must be regulated accordingly), but the kinds of each stock to be purchased must depend on the nature of the soil, and the markets for the flesh.

Q 15. Is the milking of ewes of advantage or disadvantage to the farmer?

A. This must entirely depend on the richness of the soil, but in general, the not milking is best, and more particularly if there is any good market for the lambs.

Q. 16. Whether are turnips most profitably used in feeding cattle or sheep? If the former, whether should they be consumed at the stall, in an open yard, or in a grass park, &c.

A. Turnips may be very profitably employed in feeding both, but cattle ought always to be fed at the stall, where it can be accomplished, on account of the manure—the expense would be too great to raise turnips for the sheep; it is, therefore, best to penn them on the turnip field.

Q. 17. Whether should turnips be raised according to the broad-cast way, or in drills?

A. In drills certainly.

But it is in vain to expect any permanent improvement, until the great landed proprietors put an end to that curse of the North of Ireland, illicit distillation, which they, and they only, can do, by giving proper directions to their agents; but this can only be done by their submitting to a temporary pecuniary sacrifice of a small portion of their income, as, in too many places, the lands are now let at such rents as no tenant could pay by honest and fair in-dustry.

Another very great bar to the improvement of the country is, the subdivision of the lands into small holdings, for the purpose of making forty shilling freeholders, by which a number of miserable, unfortunate wretches are compelled, under the dread of being driven from their houses, to perjure themselves twice, at least, and sometimes oftener every seven years; and if you expostulate with them (as I have sometimes done) their answer is, that they cannot help it, as they are compelled by the landlord or agent to swear they are freeholders, when they freely acknowledge they are not, or be turned out of their little cabins, so that no alternative is left them. The registering and polling of freeholders of this description, and the improper manner oaths are administered at the quarter sessions and elsewhere has very much lessened the regard for the obligation of an oath, and increased the crime of perjury to an alarming extent. Let the noblemen and gentlemen of the North West Society join in a petition to Parliament, to limit the elective franchise in Ireland to thirty or fifty pound freeholders, by which they would confer a great blessing on their country, and lessen the expense of elections, much more than one-half. The respect for oaths is also greatly lessened by the general practice of allowing common fellows, generally of bad or doubtful character, to administer oaths in almost every fair to people driving out cattle as to whether such cattle have been bought or exchanged. In place of this, let a small toll, say one half or one third of the present tolls be paid by every person bringing any cattle into a fair, whether for sale or otherwise.

To the Editor of the North West Magazine.

Mr. Editor—I proceed with a few more extracts from Mr. Slade's narrative accompanied with some observations. Our writer, as all Englishmen are, was very much struck with the swarms of people in this country, and their miserable accommodation, or more properly (in English eyes) want of all accommodation. "I was assured (says he) that it was no uncommon thing for a man and his family, after planting their potato ground in the spring, to turn the key of their door, and after employing the summer in begging, to return again to their habitation in order to gather their crop of potatoes, collect a little stock of turf, and thus provide themselves for the winter." If the mere propagation and increase of the human species were to be considered as a proof of the prosperity of a country, the North of Ireland would be the richest in Europe. The cabins swarm with children, and the population is said to be more dense than that of any part of England or even Holland.

Mr. Slade's advice to the Society seems to be judicious, with a view to the encouragement of industry, and to the introduction of a better way of living, both in a moral and physical point of view. "Several of the tenants (occupying the quarterlands above Derry) intimated an intention of applying to the Society for new leases; in which case I should recommend a survey to be taken, and encouragement given to such of them as have built or will undertake to build houses, by granting a sufficient term of years and three lives for that part which they will engage to inclose for building and planting, and a term of 21 years and one life for that part which is to be employed as a farm. This mode is practised as I have been informed, and has been found to answer, the property invested in building always proving a security for the rent, and operating as an inducement with the tenant to apply from time to time for a further lease of the farm lands, according to their improved value; this plan of proceeding moreover would lead men of property to reside upon the lands, and to take upon themselves the office of Magistrates and Grand Jurors, a description of persons much wanted, by which as well as by their general example, the people would become by degrees more civilized."

Our writer recommends the carrying of new lines of road through the country whereby, as he says, "the Society's estate would be infinitely more valuable, their tenants more civilized, and the next generation would probably see fences and inclosures take place in a tract which now appears like a barren waste, hardly accessible even in the Summer months, as I found a guide necessary to avoid the bogs when I visited it in September. These suggestions may appear rather speculative, and so are most improvements in their outset, as every man must acknowledge when he looks back to what has taken place in and about the metropolis of the empire within these last fifty years, but if the measures recommended are likely to promote the original object of the Charter, *that of encouraging a Protestant colony in the North of Ireland*, the nation at large has a right to demand, and the tenants a right to expect, from the Society's justice, that every endeavour will be made to improve their condition, and make them participate in the benefits of the Union which has lately taken place. If such an impression as this could once be made on the minds of the Irish, it would put a stop to that emigration which a contrary conduct, particularly an excessive rise of rent, has frequently occasioned. This leads me to question the policy, I might say the justice, of the city companies in letting their lands on payment of heavy fines, without stipulating for the performance of the relative duties of landlord and tenant. In the instance of the company to which I myself belong, the Ironmongers, I have discovered, that in year 1767, they let their estate for 61 years and three lives, on the payment of a fine of £21,000 to a gentleman who had acquired a large fortune in India; but who as far as I could learn, had never seen any part of the Company's estate. The Irishman who cultivates the soil might with justice observe, that he derives no protection by such a line of conduct; and if he were informed that the sum subscribed by all the companies together, in the reign of king James, amounted only to £40,000 and the Ironmongers' and their associates' proportion of that sum only to £3,334, he could not be charged with ingratitude, if he appeared to feel no obligation to his landlords, in subjecting him to a rent far beyond what can possibly be derived from the product of the soil, and which can only be paid out of the profits of his loom."

A very different account from that of the quarterlands is given of the lower liberties viz. of the improvements of Sir A. Ferguson, Lord Caledon, Sir G. Hill and General Hart. "The cause (says our author) which has led to these improvements is too obvious to require being pointed out; they have grown out of the certainty of the tenure as the possessors grew in prosperity; and in this as in every other instance of the kind, a landlord must do something to excite the interest of his tenant, before he will embark any considerable part of his property in buildings and plantations. The lower order of the Society's tenants are in general unable to cultivate their lands according to what is considered to be good husbandry, much less do they possess the means of expending any sum of consequence in planting and building."

Mr. Slade thus accounts for the Skinners' proportion being destitute of timber. It is let to Mr. Ogilvie, who not residing in the county, was neither magistrate nor juryman. Mr. O. will naturally look to set all his lands at the highest price, and the tenant compelled not to lose a square yard of that for which he pays so dear, can neither afford to plant or cultivate a tree of any kind; so that if any kind of plantation is to be seen it turns out to belong to some freeholder, or person having a lease in perpetuity; and these little plantations are raised and maintained at no inconsiderable expense, on account of the great temptations they offer to the poor tenantry, whose lands do not produce wherewithal to make a handle for a pitchfork."

The circumstance which our author mentions in a subsequent part of his narrative, shews the gross folly and impolicy of driving away to foreign regions a hardy and valuable tenantry, by imposing heavy rents, thus draining the very heart's blood of the country, to infuse strength into rival or hostile nations.—" The road from Downhill to Coleraine, goes through the best part of the Clothworkers' proportion, which was held by the Rt. Hon. R. Jackson, who was the Society's general agent. It is commonly reported in the country, that having been obliged to raise the rents of his tenants very considerably in consequence of the large fine he paid, it produced an almost *total emigration* to America, that they formed a principal part of that *undisciplined body which brought about the surrender of the British army at Saratoga*." How must it have astonished the worshipful Society, that in place of raising a bulwark in favour of their native country, their agent in this instance was assisting to demolish her power beyond the Atlantic ! The writer feels it his duty however to add that Mr. Jackson's character was one of the greatest honour and integrity, and that his memory is universally and highly respected

The narrative is followed by a report drawn up by J. C. Beresford Esq. in which he vouches for the correctness of Mr. Slade's observations. He advises with respect to lands likely to fall out of lease as follows. " I lay it down as an incontestable point, that it is the great object of the Irish Society, both for the benefit of the colony established by them (the prosperity of which will redound to their honour, and the decay of which will be equally disgraceful to them,) and for the purpose of increasing their own rents in the most fair and equitable manner, to procure by every means in their power, not only resident tenants, but residents of wealth and respectability, for if the tenants are not residents, it is impossible the value of the land should increase in the proportion it ought to do; and if the land is let to tenants who are not able to expend the money necessary to reclaim, drain, and improve it, the expiration of the lease will find the ground in the same situation it was at its commencement, this has been strongly exemplified in the lands of " *Granshagh*"—for notwithstanding the Society gave them half a year's rent, to enable them to commence their improvement, yet, after nine years no improvement has been made, (1803) but the land remains in its original state.

Taking it then for granted, that our object (I say our object, as I feel myself highly interested, both as an Irishman and as your agent, in the prosperity of the colony)—conceiving then that our object is to procure a wealthy and resident tenantry, whenever it can be done without injury to the industrious, I should follow Mr. Slade's plan as one of the best that could be adopted; I mean that of giving the tenant a perpetuity in a part of the ground he holds, whereon he would cheerfully lay out his money, and a lease for one life and certain number of years of a larger proportion. The consequence would be, that every shilling that was laid out on the part he got the perpetuity in, would tend to increase the value of the surrounding ground, and when the lease of the terminable part expired, it would become much more valuable; inasmuch as all lands adjoining to towns or inhabited places rise in proportion to the money expended in their neighbourhood.—This scheme has been fully proved by Lord Northland, in the co. Tyrone, who has tried the experiment, and many have been induced to follow his example. I would not however trust entirely to the liberality of my tenant in such cases; I would bind him to lay out a sum of money in building, and to plant a certain number of trees: the sum laid out and the number of trees to be regulated by the nature of the ground, and how far it is fit for plantation or tillage. In subdividing the farms, great care should be taken to do it so that the tenant may be induced to improve the barren as well as the arable parts.

The interest the tenants have now in their leases, is for the most part very small, as their tenures are only for a few years, and generally one or two existing lives; and as they do not think it prudent on such short terms to lay out money on a liberal scale, the more wealthy part of them would very willingly surrender their present leases and commence immediately on an increased rent—since they would thus be enabled to lay out their money on building, &c. with advantage; few of them for want of the needful expenditure getting the value out of their ground. And it would evidently be the interest of the Society for the following reasons: In the first place it would expedite the improvement of this part of their property, which is now from its barrenness and unimproved state, a disgrace to the city of Londonderry, and a discredit to society: In the next place, it is much to be feared lest the people of Londonderry, who are increasing daily in wealth and seek the relaxation of a country retirement, might be induced to establish themselves and build their villas on the other side of the water.

Mr. B. closes his remarks by observing that the Society would understand the nature of their estates better by sending to Ireland a deputation from their body, than by explanations from any person whatever, in furtherance of which laudable resolution should it be made, he promises his cordial co-operation.

X.

On fertilizing the Blossoms of Pear Trees.

(By the Rev. G. Swaine.)

An almost general unproductiveness as to the fruit of the superior varieties of pear trees, has long been the subject of complaint in Britain. Among the first prizes offered by the Caledonian Horticultural Society, was one "for the communication of the best means of bringing into a bearing state, full-grown fruit trees, especially some of the finest sorts of French pears, which, though apparently in a very healthy and luxuriant condition, are yet almost totally barren." And the President of the London Horticultural Society, in his paper on the cultivation of the pear tree, remarks that "the pear tree exercises the patience of the planter during a longer period, before it produces fruit, than any other grafted tree which finds a place in our gardens—and though it is subsequently very long lived, it generally when trained to a wall, becomes, in a few years, unproductive of fruit." But I have no need to refer to the testimony of others for proof of the existing grievance, possessed as I am myself of a striking instance of this untoward disposition in an individual, of the genus pyrus, which has long baffled all my attempts to alter its infertile habits; it is a Gansell's Bergamot, which has grown for twenty years or more in its present situation against a wall, part of which has a S.W. and part a S.E. aspect. This tree has all the appearance of health, and sufficient luxuriance, and has been for several years constantly covered with a profusion of blossoms at the proper season, but has never before this borne more than three or four pears in any one year, and most frequently not a single one. It never occurred to my observation before the year 1820, when I was much occupied in the artificial impregnation of different kinds of fruit, that out of from 9 or fewer to 15 or more florets, of which the cluster of the pear tree consists, only the three lower ones (in general) *set*, or in other words are effectually impregnated for fruiting. Recollecting the practice of the best gardeners, of topping their early beans, *i. e.* of pinching off, with the fore finger and thumb, the uppermost blossoms of the general spike, for the purpose of setting the lowest and earliest ones, which would otherwise prove abortive, I conceived, that removing the upper and central blossoms of the cluster of the pear, as soon as it could conveniently be done, would have a similar good effect in invigorating the remaining ones, and causing them to set with greater certainty. With this view in the spring of 1821, as soon as the three lower blossoms of the clusters began to show their white faces, I set to work with my sharp-pointed scissars, on two pear trees, the one Gansell's Bergamot before mentioned, and the other a brown beurré, and in as short a time as I could have properly thinned two dozen branches of grapes, I divested both these trees of three-fourths of their budding honours. On the beurré this operation subsequently appeared to have the best effect; for there was scarcely an instance in which the three remaining blossoms did not set, which afterwards produced the finest crop of pears I have yet gathered from that tree.—But on the intractable Gansell, although the blossoms at first seemed to set, and many of them did not fall off till midsummer, when they were nearly as large as common gooseberries, yet not a single pear arrived at maturity. By dissecting many of the largest which fell off last, and comparing them with some of the beurrés of the same age and size, it was plain that the kernels of the former had not been impregnated. This circumstance induced me to think that there must be some imperfections in the essential parts of the blossoms. In the following spring of 1822, on attending to the blossoms of this tree, which blooms earlier than any other I have, they appeared to me to remain much longer in a globular state without expanding, than any other variety of pear which I have had an opportunity of noticing. I fancied likewise that the pistil was fit for impregnation before the anthers were ripe; and even before the petals expanded; and from the peculiarly slender and delicate make of the latter, I supposed that it ceased to be in a proper state as soon as it became exposed to the sun and air; I therefore concluded that there might possibly be a chance of obtaining fruit, by depriving the blossoms of their petals before they expanded, and inclosing with each floret in this state, within a paper envelope (as in my mode of effecting artificial impregnation) a riper *blossom*, either of its own, or preferably of some other variety of pear. Accordingly on the 27th of March, 1822, I began this operation, and in a day or two had thus tied up twenty-seven blossoms. Ten of these envelopes contained blossoms of the beurre pear, fourteen contained blossoms from the same tree, and three blossoms of the pound pear. From the latter presenting a coarse and large appearance, I had very little expectation. I intended to have done many more, but was prevented by ill health. The papers were not taken off till the 15th of April, on which day the weather began to be warmer, without sunshine. Observe, I had previously cut off from all the clusters with which the tree was abundantly furnished in every part, all the blossoms except the three lower ones, as in the former year; and that having tied up but one of these in each cluster, I immediately cut off the two remaining ones. The blossoms were operated on in different parts and aspects of the tree; for part of it, as I said before, faced the S.E. and part the S W.—Of the ten blossoms treated with beurre pear eight set, two of which afterwards fell off, but I suspect not fairly, and six are now proceeding to maturity. One only of the fourteen where its own blossoms were used, now remains. Of the three wherein the pound pear was concerned, the whole failed. The only pear now on the tree which set naturally, and on which no operation was performed, was produced on a cluster of blossoms, at the extremity of a leading horizontal shoot of last year, which did not make its appearance till after the others had dropt off. This circumstance by the way proves, that the fruiting buds of the pear do not invariably require three years for their perfection. As the pears are now from 5½ to 7½ inches in circumference, I consider them as past all danger of failure.

Whether the result of these experiments be such as to authorise an expectation, that artificial assistance in vegetable fecundation will hereafter become of so much importance to gardeners in the instances just alluded to, in those at present recognized, of the cucumber, the melon, the early bean, and the hautbois strawberry, must be left to futurity to ascertain.

PRESERVING CARROTS, &c.

(From Evans and Ruffy's Farmers' Journal.)

Sir—In your Journal of October 18th, there is the following inquiry, dated Essex, October 12th, 1824, with the signature *T.*—"What is the best way of preserving Carrots for winter, and what will it cost per bushel, or per acre, to take them up from sandy land where the root is large and plant thin." As I have not seen any answer to the inquiry if you think the following information worth insertion in your Journal, it is at *T's* service. Having repeatedly grown Carrots, I have tried several ways of storing them, and have had great loss by putting too large a quantity together both in pits and buildings. The last two winters I have been very successful: the plan I have adopted (though it may not be the best,) is the best I have ever tried, which is, to put them in small pits, not more than three feet wide at the top of the ground, sloped to two feet wide at the bottom, 18 inches deep in the ground, and six or eight yards long. Fill the pit half-way up with carrots, throw in promiscuously, (not regularly stacked,) then throw a quantity of the sandy earth in amongst the carrots; then more carrots, then more earth; then heap the carrots on till the ridge is about eighteen inches above the ground; then cover them with with a bolting of long wheat straw, and lay a quantity of earth over the whole; beat it with a spade to keep the wet out. The earth running in amongst the carrots prevents their heating. Mine have kept very bright till late in the spring, and by having them in small quantities it does not expose many at a time to the severity of the weather.

I had 199 quarters four bushels dug the week before last at 5d. per quarter digging and topping; the expense of loading, pitting, straw, &c. about 3d. per quarter, making it 1d. per bushel, or about £2 5s. per acre. The closer the tops are cut off the better, it prevents their growing in the pits.

Having stated my expense and method, in digging and storing, I shall feel obliged if any of your correspondents will inform me of the best and cheapest plan of sowing and raising them? I have been accustomed to sow them broadcast, and find the weeds come first, and grow faster than the carrots, and make it very expensive hoeing them. Is there any method of drilling them at a little expense, drilling implements being far too costly, unless used on a large scale?

Londonderry Savings Bank.

On the 16th inst. a General Meeting of the Trustees and Managers was held, for the purpose of auditing the accounts and amending the Laws of the Institution, agreeably to the late Act of Parliament,

The Lord Bishop of Derry in the Chair.

From the statement laid before the Meeting by the Committee of Management, it is gratifying to find, that an increasing confidence in this useful institution is felt by that class of the community for whose peculiar benefit it was originally intended. On the 20th of November, the day fixed by law for the annual settlement, the number of persons having accounts open with the Londonderry Savings Bank, amounted to 259, and the lodgments with interest, at that date, to £4588 11s. 5d.—Of these accounts 190 are under £20 each.

The Quarterly Meeting of the General Committee of the N. W. of Ireland Society will take place at the King's Arms, Derry, on Tuesday the 11th inst.

1. To prepare a Petition to his Excellency, the Lord Lieutenant, for procuring a Charter, &c.

2. To make the necessary arrangement previous to an application to Parliament for an act to make the Canal from Derry to Lough Erne.

3. To receive a communication from Geo. A. Wray, Esq. respecting a situation for an Agricultural Seminary.

And for the general objects of the Society.

By order,
W. MARSHALL, Sec.

CURRENT PRICES IN DERRY.

Oatmeal ...	12	0	*to*	13	0	*pr cwt.*
Oats ...	0	8½	–	0	10	*pr st.*
Barley ...	0	12½	–	0	0	
Potatoes ...	0	2	–	0	2½	
Beef ...	0	3½	–	0	5	*pr lb.*
Mutton ...	0	3½	–	0	4	
Veal ...	0	5	–	0	8	
Butter ...	0	9	–	0	10	*pr18oz*
Firkin Butter, 1st	96	0	–	0	0	*pr cwt.*
Do. 2d	90	0	–	0	0	
Do. 3d	80	0	–	0	0	
Flax uudressed	38	0	–	60	0	*pr cwt.*
Five hank yarn	2	9	–	3	4	*pr spl*
Four do. do.	2	7	–	2	10	
Three do. do.	2	8	–	2	11	
One do. do.	2	6	–	2	8	
Hides ...	41	0	–	65	0	*pr cwt.*
Pork ..	41	0	–	46	0	*pr cwt.*

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IMPROVING WASTE LANDS.

The following are the opinions of a gentleman of practical knowledge, who published a valuable work, entitled Rural Improvements:—

My idea of improvement does not only comprehend the increased value of the thing to be improved, but that the improvement be more than equivalent to the expense which attends the obtaining it. For I can have no idea of any thing being an improvement which is attended with loss. Suppose a gentleman possessed of an estate of £600 per annum, and that he has £1000 in the Stocks, which brings him £40 per annum. Should he convert his stock into money, and expend the same in improving his estate, which when effected, only produced £30 per annum; this surely could never be thought an improvement. But, should the expending the £1000, add £100 per annum to the value, it might then with great propriety be called an improvement. And with respect to the tenant; supposing in his farm he has 100 acres of land which are considered as little better than waste, and not valued to him at more than a shilling an acre, and which perhaps he does not make half a crown an acre of, being only applied to the run of a few young cattle in the summer; if a method could be pointed out, by which such land might be made to produce ten shillings an acre besides paying the expense, it is very clear, the improvement would be in the proportion of four to one, or 400 per cent. Now this is the improvement we propose, and have no doubt of pointing out the means by which it may be certainly effected.

Few husbandmen have any notion of improvement, independent of manures of some kind or other; but, in many places, they are not to be obtained at any rate—and many lands are so situated and circumstanced, that the expenses of manuring (if manures could be got,) would far exceed all advantages; and therefore would terminate in loss. But I maintain, that such lands may be improved, independent of any manure but what may be raised from the land itself. Indeed there is land so barren, as to be incapable of any improvement—such as absolute bog, before it is drained: rock, and pure sand: but land that will bear furze, fern, broom, thistles, or weeds of any sort, may be cultivated to useful purposes, without the expense of carrying manure to the same.

I by no means mean to decry the use of manure; I too well know its value; and that farmer must be very indolent, or ignorant, whose lands are not fertile, if he can have it in plenty upon moderate terms, if he neglects it; but the quantity of it is limited, and not to be purchased in the quantities desired: therefore, if land is not to be improved without manure, some hundred thousands of acres can never be improved at all.

It may be said, attempts of this kind have been formerly made without success; and that much land, which has been in tillage heretofore, now lies neglected, in the condition above represented. This is certainly true, and what I have frequently seen; but proves nothing against this plan of improvement, though a forcible impeachment of the avarice or weakness of the occupier. If men will sacrifice all future advantage to a little increased present gain, the fault is their own, and not the lands they possess.

Suppose a farmer should spade and burnbeat a tract of such land as above described, and reap a middling crop of wheat the first year, a thin crop of barley the second, and a very poor crop of oats the third, not enough to pay the expenses of tillage; can it be a wonder, that such land should for a long series of years be considered as absolutely barren and worthless? Such a practice would beggar any land; and yet this is the practice commonly pursued. Whereas, had the farmer contented himself with one crop of corn, and succeeded that by an ameliorating crop, instead of impoverishing and reducing his land to a state of beggary, it might have been in a state of constant improvement. The art required is, to raise a tolerably good crop at first; that being obtained, he must be a poor manager who cannot keep on with advantage. This is not a mere matter of opinion. I have a moor of 120 acres, which for 50 years back, never let for more than 18d. an acre.—Some of the old people there remember its bearing as good corn and clover as any land in the parish, though I have seen some of £4 an acre. I have it now in hand, and last year had a field of wheat of about five acres, which had been spaded and burnt the summer before. This produced fifteen bushels to the acre, which, at five shillings a bushel, amounts to £4—and afforded nett profit forty shillings an acre, or near it. The land is now in sufficient heart to produce a good crop of barley; but that I will dispense with, and instead of it, take an ameliorating crop of turnips, clover, or some hoeing crop, that may improve it. The raising large crops of corn by dint of manure, at a very heavy expense, comes not within my idea of improvement; and in this the most valuable part of improvement consists, at least so far as arable lands are the subject thereof."

(To be continued.)

LINEN TRADE.

Our Subcribers in the linen trade are reminded, that the act passed in last Session, chap. 43, abolishing the bounties on linens exported, comes into operation on the 5th proximo, after which, for twelve months, the present bounties will be reduced one-tenth. There is little doubt, but a clause will be introduced into one of the General Customs' Bills, intended to be passed next Session, to abolish totally these bounties, in a much shorter time than the expiry of ten years mentioned in the act. We may here remark, that while the manufacture of many of our coarse descriptions of linens are on the decline in the north of Ireland, those of similar kinds, (particularly for exportation,) are brisk in Scotland. Owning to the improvement in machinery in that country, we are left far behind in one branch of the linen trade, the manufacture of coarse table linen. By the following report, it appears that weavers are greatly wanted for these fabrics.

" DUNFERMLINE, Dec. 20.—The manufacturers of Table Linen here have voluntarily raised the price of work three half-pence in the shilling, which will be very much felt throughout the town.

SCHOOL OF ARTS.

Immediately after the usual chemical lecture, Dr. Fyfe took an opportunity of describing Brown's gas vacuum engine. The object of this engine is to obtain power by means of a vacuum created during the combustion of inflammable gas—for which purpose a gas burner is lighted within the cylinder, and allowed to consume the internal air, part of which being condensed into water, while another part is thrown off by the sudden combustion, the valve instantly closes, and produces the vacuum. Dr. Fyfe gave a decided opinion in favour of this discovery. It is considered as one of the grandest combinations of chemical and mechanical science ever introduced to public notice. Several persons had condemned the engine as useless, but those individuals seemed to be unacquainted with the principle upon which the vacuum was produced. They argued upon the theory, that the combustion is effected in a close vessel; while the principle of the engine is, that the combustion is carried on in an open one. In point of economy other writers have fallen into an error by estimating the expense much too high. It is ascertained that during the consumption of one foot of gas, 300 gallons of water would be raised to the height of about twenty feet—the cost of which must be trifling to that of maintaining a steam engine. In the engine already constructed by Mr. Brown, the mercury gage stood at from twenty-four to twenty-six inches—thus giving a pressure of from 12 to 13lbs. to the square inch, while the common steam engine had not more than 7 or 8lbs. £20,000 had already been given for the patent for Scotland, and £9000 for the right of applying this discovery to the propelling of private carriages and carts in England.

The rapidity with which new discoveries in science are introduced to the notice of the students cannot be too generally known, and it is pleasing to understand that their number is greater than the preceding year.

The value of the instruction conveyed in this Institution, is becoming every day more apparent to those for whose benefit it was established; for unlike some of the Mechanic's Institutions which have wandered widely from the example set them by the School of Arts, the students here have their attention solely directed to those objects which will be of real practical utility to them in their trade. It is very satisfactory also to find, that the importance of this extension of a rational sound education is becoming apparent to all calm and dispassionate observers, who take an enlarged view of the great interests and securities of society. We have been highly gratified to find, that those who by their high official station, are doubtless watching over all that affects the internal prosperity of the country, have not been inattentive observers of what is going on in this matter, in our comparatively distant part of the empire, for in the list of the subscribers to the School of Arts for the present, we have seen the names of the Right Honourable Robert Peel, and the Right Honourable W. Huskisson. We have heard it said also, that these distinguished statesmen, after having read the last report of the Directors, expressed themselves in terms of strong approbation of the objects of the School of Arts, and the principles upon which it is conducted. We trust such an example will have its due weight with the wealthy inhabitants, and that an institution so useful, will be generally and strongly supported by all who wish well to the country and to Scotland's fame.—*Edinburgh Paper*.

The following observations from that ably conducted Paper, the Northern Whig, are so much to the point on this subject that our readers, we presume, will read them with attention and with pleasure.

MECHANICS' SOCIETIES.

Mechanics and artisans, and, in fact, all the operative classes of Society, are every day becoming more elevated in character, more powerful by their knowledge, & consequently more valuable members of the community.—Institutions for their exclusive instruction, in those branches of Science and Arts, which have practical reference to their respective occupations, are among those admirable provisions for the advancement of civilization, for which the present age is so eminently distinguished. To Scotland the credit is justly due, of having struck out this grand means of developing the talents, enriching the minds, and augmenting the usefulness of those, who are confessedly the most essential members of society. England, ever ready to imitate every thing connected with the spread of information, which she may not have had the good fortune to invent, lost no time in following the example of the Scotch philanthropists. We rejoice to find, that Ireland has at length joined in the same glorious work of national utility. By a late Dublin paper, we learn that a Society has been established in the metropolis of our country, denominated the "Dublin Mechanics' Institute." Resolutions have been entered into, to procure a suitable library, a museum of models, an experimental laboratory, and all the necessary apparatus which such an Institution requires.

The most salutary consequences may be expected to result from this establishment.—It will operate upon our artisans and mechanics as a powerful stimulus to scientific investigation—it will invite into a channel of useful exercise, those talents and endowments, which are so capable of being improved by progressive cultivation—it will tend to enlarge the sphere of their intelligence upon those subjects in which they have a personal concern, and thus assist in bringing to a higher degree of perfection, some of the most useful branches of science. Here then is an admirable union of individual intelligence and elevated sentiment—an association for the noblest purposes; not to devise new political constitutions, and to demolish old ones; not to read lectures on government and religion, but to enlarge the understanding, to catch a spark from the fire of philosophy, to enter into the great studies of matter and of mind—to become acquainted with those grand laws which regulate the universe—to teach more of the great and beneficent Author of all things, by viewing and analysing his stupendous works,—to root out the poisonous weeds of superstition, by strengthening the reasoning faculties, and imparting to the mind new and just ideas.

Belfast is justly celebrated for the variety of its useful Establishments. Among the number, let a Mechanics' Society be included. Our numerous manufactories attract to our town, crowds of that useful class of the community, and bring into active play a vast quantity of mechanical talent. The manufacturing interests of the North of Ireland, render it peculiarly well adapted to the furtherance of the objects which such Institutions have in contemplation, and if the thing be entered into here with proper exertion, we have no question of its success. A spirit of enterprise, research, and energy which would stimulate to industry and thought, must be the happy result of such a measure, and we have no doubt, that the experiment would not only improve the minds of our mechanics and artisans, but have a direct influence on their moral condition, while the effects on our trade and commerce, would be of the most satisfactory description.

In Answer to a Query on the use of salt as a Manure.

(From the Irish Farmers' Journal.)

Sir—" At the enquiry relating to the salt duties in April last, Mr. Parkes mentioned to the board of trade, an old gentleman of Lancashire who had made a great variety of experiments on his own estate as to the use of salt for manure. When I was in that county last summer, I learnt that this was Mr. Hollinshead, near Chorly, who died in 1802, at an advanced age, having devoted above twenty years of his life to a scientific and practical enquiry on the use of salt as a manure. By the favour of his cousin, Lawrence Brook Hollinshead, Esq of Trevor-house, Flintshire, who inherits his estates, I have obtained an account of the result of his experiments, which I shall state, not merely to show the use of salt for manure, but to supply information as to the *mode of using it.* With regard to the *quantity* to be applied, he observes, that—' When a farmer intends to fallow a piece of ground, he ought first to sow it with *such a quantity of salt as would be sufficient to destroy vegetation, viz. forty bushels per acre*, which by cutting and dividing the viscous substances in the earth, would reduce it into a proper state to become food for plants. The farmer must take notice, that this salt is to be sown on the ground, some time before he begins to work his fallows with the plough: the autumn will be the most proper season, in order to give the salt sufficient time to destroy the grass and other roots upon it, before he begins to work it. The salt being thoroughly mixed and incorporated with the soil, during the spring and summer following, while the land is on the plough, will, by the time the seed is sown upon it, be reduced to that strength which is the most proper for effectually and vigorously assisting and supporting vegetation when the grain is on the ground; and such lands will be found to produce a crop superior to those under any other mode of cultivation. This method of sowing the intended fallows with salt, will therefore serve very much to lessen the labour of the husbandman in working his grounds; for the tough and adhesive clods and lumps which are generally so troublesome especially upon clayey soils, will be so completely broken and dissolved by the operation of the salt, as to give much less obstruction to the harrow at the first working. In deep loamy dry earth, upon which wheat has grown, after the crop is got in, the land should be ploughed, and lie in that state until the spring when it must be cross ploughed and wrought fine with the harrow, and planted with potatoes. As soon as the potatoes are covered with earth, then sow or spread sixteen bushels of salt per statute acre upon them, and when they are dug out in the autumn, then sow a crop of wheat again, taking care to pick all the potatoes clean out, that they may not injure the wheat in the following spring by growing up among it. By this method of cultivation, a crop of wheat and another of potatoes may be produced alternately for ever; instead of losing a whole year's produce according to the old custom, while the land is fallowing. For other corn lands, sown in the usual way after a spring ploughing, the best method will be to sow sixteen bushels of salt per acre, immediately after the grain is covered in by the harrow. This, by meliorating the soil, destroying weeds and insects, and attracting moisture, produces an abundant crop—and by afterwards sowing ten bushels per acre annually, these lands will ever after be exceedingly fertile.'"

RAILWAYS.

This mode of conveyance now engages a considerable portion of public attention both in England and Scotland, where measures are taking for opening railway roads on an extensive scale. The following extracts are from an elaborate article in the *Scotsman*, which is extremely interesting, but rather adapted for the learned world, than for the common class of readers. The writer after some calculations comes to this conclusion, "that the effect produced by the draught of a single horse,* is ten times as great upon a railway, and thirty times as great upon a canal, as upon a well made road. Yet a railway costs only about three times as much as a good turnpike road, and a canal about nine or ten times, and the expense of repairs in a canal or railway is probably less in proportion to the original outlay than in the case of a road. It is obvious that were railways to come into general use, two-thirds or more of the expense of transporting commodities would be saved. With regard to canals as compared with railways, if a horse power effects three times as much upon a canal as upon a railway, the canal costs about three times as much; and will of course require nearly the same rate or dues per ton to make the capital yield the same interest.

But here it is of great importance to remark, that this computation refers solely to a velocity of two miles an hour. If the friction which impedes the motion of a car or waggon, and the resistance of the water to a ship's progress were governed by the same laws, the same conclusions would hold true whatever the velocity might be. But this is far from being the case. In illustrating this point, it will be convenient to refer to a constant force of draught of a given amount. Suppose then that the body to be moved, is urged forward by a force equal to 100lbs. suspended over a pulley at the end of the plane on which it moves.

1st. With regard to the motion of a body in water, it has been found that the resistance to a floating body is as the square of the velocity. Now taking as a basis the known effect of the force of draught of 100lbs at two miles an hour, let us ascertain what force could move the same body at a greater velocity. On a canal a body weighing 90,000lbs is moved at the rate of two miles an hour, by a force of 100lbs. therefore to move the same body,

At 4	miles an hour	will	require	400lbs
At 6	do.	do.	do.	900
At 8	do.	do.	do.	1600
At 12	do.	do.	do.	3000

Or conversely, 100lbs. will move

	90,000lbs.	at	2 miles an	hour.
or	22,500	at	4 do.	do.
or	10,000	at	6 do.	do.
or	5,620	at	8 do.	do.
or	2,500	at	12 do.	do.

For example let us suppose that it were required to determine, since one horse draws a boat loaded with thirty tons at two miles an hour, how many horses could draw the same load at four miles? We find first that since the boat is to move two times as fast, it will require four times the absolute amount of power, or 400lbs. But a horse moving at four miles an hour pulls only with a force of 64lbs. of course it would require six horses to exert a power of 400lbs. to move the boat at the rate proposed.

Let us now see what amount of power will produce corresponding effects upon a railway, and before we make more particular enquiry, let us suppose that the effect of friction instead of increasing as the square of the velocity like the resistance of a fluid, increases in the simple proportion of the velocity. A force of draught of 100lbs on a level railway, moves a body weighing 30,000lbs at the rate of two miles an hour. Hence at four miles per hour, it moves 15,000; at six, 10,900; at eight, 7,500; at twelve 5,000;

Thus though a moving force of 100lbs produces three times as great an effect upon a canal as upon a railway, at two miles an hour, this superiority of the water conveyance is lost, if we adopt a velocity at six miles an hour, and at all greater velocities, the same expenditure of power will produce a greater effect upon a railway than upon a canal or upon the sea.

But experiments have proved that the effect of friction is much over-rated by the above supposition. It has been found that the friction of rolling and sliding bodies follows nearly, but not precisely the same law as to velocity; and that law is, that the friction is the same for all velocities—it follows, then—1st. That (abstracting the resistance of the air) if a car were set in motion on a level railway, with a constant force greater in any degree than is required to overcome its friction, the car would proceed with a motion continually accelerated, like a falling body acted upon by the force of gravitation; and however small the original velocity might be, it would in time increase beyond any assignable limit.

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* Estimating the force of his draught at 100lbs. when walking at the rate of two miles an hour.

2d. Setting aside again the resistance of the air, (the effects of which we shall estimate by and by) the very same amount of constant force which impels a car on a railway at two miles an hour, would impel it at ten or twenty miles an hour, if an extra force were employed at first to overcome the inertia of the car and generate the required velocity.—Startling as this proposition may appear, it is an indisputable and necessary consequence of the laws of friction.

Now it would be at all times easy (as shall be shewn) to convert this accelerated motion into a uniform motion of any determinate velocity; and from the nature of the resistance a high velocity would cost almost as little as a low one. For all velocities therefore above four or five miles an hour, railways will afford facilities for communication prodigiously superior to canals. Indeed there is scarcely any limit to the rapidity of movement these iron pathways will enable us to commend.

There is no single circumstance so essential to the improvement of a country, as abundant and easy means of internal communication. Part of the price of commodities always consists of the expense of bringing them from the place where they are made or raised, to the market. In improved districts this amounts in general, only to a small per centage upon the first cost; but in rude or backward districts, unprovided with tolerable roads, it often enhances the value to three or four or even ten times the original amount, and of course either greatly lessens, or entirely precludes their use. Coal for instance is not found within less than 100 miles of London, and had some more economical mode of conveyance than carting not been invented, this article which is sold at 40s. a ton in the metropolis, would have cost £6, a price which would have been nearly equivalent to a prohibition against the use of this kind of fuel. Such are the vast facilities which navigation affords for the transportation of commodities, that the coal of Gloucestershire can be sent by sea at a cheaper rate to Jamaica, than it could be sent by land in carts to London.

In early times the roads were mere foot-tracks, and goods were universally carried on the backs of horses. To these succeeded gravelled roads for wheeled carriages, and the latter were followed by canals. A horse employed in tracking a canal boat will perform as much work as thirty horses in carts, or as 120 pack-horses.

Railways are a much later invention than canals; and for particular purposes, such as the conveyance of coal, stone, or other heavy commodities, down a short inclined plane, sloping at an angle of three or four degrees, they are decidedly superior. As a means of general communication they are cheaper in the first outlay than canals, more commodious in some respects, and adapted to a greater variety of situations; but so long as horse-power was the only power employed, it may be doubted whether the balance of advantage was not in favour of canals. We are quite satisfied however, that the introduction of the locomotive steam power has given a decided superiority to railways. Indeed we expect to convince our readers, that the general use of railways and steam-carriages for all kinds of internal communication, opens up prospects of almost boundless improvement, and is destined perhaps to work a greater change on the state of society, than even the grand discovery of navigation.

The edge-rail is considered superior to the tram-rail, and is made either of wrought or cast iron. When wrought iron is used (which is much preferable and equally cheap) the bars are made about three inches broad and one inch think, twelve or eighteen feet long, and supported by stone sleepers at the distance of every three feet. The upper edge of the rail is generally made with a convex surface, to which the wheel of the car is adapted by a groove made somewhat wider. The waggons generally used run upon four wheels, of two to three feet diameter, and carry from twenty to fifty cwt. Four or five of them are drawn by one horse. On the dead level railway constructed by Mr. J. Grieve for Sir J. Hope, near Musselburgh, which is one of the most perfect in Britain, a single horse draws five loaded waggons, each containing thirty cwt. at the rate of four miles an hour, in all 7½ tons, exclusive of the waggons which weigh three tons more.

Mr Palmer, an English engineer, gives the following as the effect of a single horse's draught upon different railways, at 2½ miles an hour.

	wt. of load		wt. of load & waggon.
Lanelly tram-road	4,602lbs	—	8,850
Surrey do.	6,750	—	9,000
Penryn edge rail	10,084	—	18,050
Cheltenham tram-road	8,679	—	13,500
Edge-railways, New-castle,	17,773	—	25,500

This table shews the great superiority of the edge-rail. The engineer observes too, that the vehicles were made in a very rude manner, and that were more care employed in their construction, the load might be much increased.

Mr. Palmer has proposed an ingenious kind of railway, which deserves notice. It consists of a single rail or continuous rod, of the usual form, but raised about three feet from the surface of the ground, and supported by cast metal pillars every ten feet. Two wheels with grooved edges, and twenty-four or thirty inches diameter, run the one before the other, upon this railway; and from the iron frame to which they are attached by their axles, two chests or receptacles made of iron are suspended by stiff rods, exactly like panniers from the back of a horse. The chests hang very near to the surface of the ground; the load which is in those chests being so low, that the centre of gravity is always beneath the level of the rail, the machine unless very unequally loaded has no tendency to overset. The principal advantages of this contrivance are the following:—A moderate fall of snow would produce no obstruction; it could be carried over uneven ground, and over small hollows or ravines, without cutting or embanking, or casting bridges, by merely lengthening or shortening the pillars; the lateral friction, from the want of perfect parallelism in the two opposite rails of the ordinary railway is avoided; and in many cases the rail might even be carried along the side of a common cart-road with a very small additional expense. Mr. P. states (from his own experience) that the effect produced by the draught of a single horse, was nearly double of that produced on the common railway, or 45,000lbs. including the vehicle. There is nothing in the nature of this machine to render steam power inapplicable to it.

It has been already stated, that a loaded boat weighing fifteen tons, and waggon of the same weight, the one on a canal the other on a railway, would be impelled at the following rates, by the following quantities of power —reckoning one horse power equal to 180lbs.

Miles pr. hour	Boat on Canal.		Waggon on Railway.	
2	33lbs.	1-5th horse pr.	100lbs.	½ horse pr.
4	133	2-3ds	102	½
6	300	1-¾	105	½
8	533	3	109	½
12	1200	7	120	⅔

The steam-engine as we commonly see it, is so bulky and ponderous as to create an impression at first view that its whole power would scarcely transport its own weight.—The steam boat which cuts its way through the ocean, in defiance of tide and tempest shews that this is a mistake. For all velocities above four miles an hour the locomotive engine will be found superior to the steam boat. It is stated in a Liverpool paper that one of them of ten horse power conveys sixty tons of goods, at the rate of six miles an hour on a level railway. Mr. Blenkinsop states that his patent locomotive engine weighs five tons, consumes two-thirds of a cwt. of coals and five gallons of water per hour, draws 27 waggons weighing 94 tons on a dead level, at 3½ miles per hour, or fifteen tons up an ascent of two inches in the yard—when lightly loaded travels ten miles an hour, does the work of ten horses twelve hours, and costs £400.

The best form of a steam-coach for passengers would probably be the following:—A gallery seven feet high, eight wide, and 100 in length, formed into ten separate galleries ten feet long each, connected with each other by joints working horizontally to allow the train to bend where the road turned. Two of the ten rooms might be set apart for cooking, stores, &c; the other eight would lodge 100 passengers weighing (with luggage) twelve tons.

When the steam-coach is fairly brought into use, practice will lead to many improvements. We think however we are not too sanguine, in expecting to see the present extreme rate of travelling doubled. We shall then be carried at the rate of 400 miles a day, with all the ease we now enjoy in a steamboat, but, without sea sickness, or the danger of being burned or drowned. From Calais to Petersburgh or Constanitnople would be a five days' journey; and the tour of Europe might be accomplished in a shorter time, than our grandfathers took to travel to London and back again.

EXPERIMENT ON MANGEL WURZEL.

From Evans and Ruffy's Farmers' Journal.

Sir—Not knowing whether or not any experiments were made in the last very severe winter. for the purpose of ascertaining whether or not the Mangel Wurzel would stand the frost; and being desirous of making known to such of your readers as may entertain doubts upon the subject, the result of an experiment I made; I inform you, that I had about an acre in a northerly aspect and a high exposed situation (in the north of Devon), which it was impossible to remove had I been disposed to do, on account of its being so firmly frozen into the ground. There were in other parts of the same field the Ruta Baga Turnips, which were carted off whenever an opportunity offered for it; and although the Mangel Wurzel remained in the ground until the spring of the year, when it again began to vegetate, it was then drawn quite firm and unaffected by the frost. It may not be amiss to add, that the only manure which was used was lime, and that the ground on which the turnips grew was also dressed with the same manure. I mention this for the benefit of such of your readers, as do not know that Mangel Wurzel as well as Ruta Baga, when produced in ground so dressed, are more solid, and, I think, more likely to stand the frost, than when produced in ground manured with dung.

I am, Sir, your obedient servant,

J. W.

FLAX PREMIUMS.

A number of admirable specimens of flax were exhibited last market day. The judges had much difficulty in deciding which candidate should obtain the first and second premiums. They all expressed themselves highly gratified with the superior style in which the flax was prepared. Still the bulk of the flax in the market shewed less improvement than might be expected. Can no plan be devised to make it the interest of the scutchers, to take more pains, that the article may come forward in a merchantable state? Many instances have occurred of quantities of flax bringing from 30 to 40 per cent. less price, than the same flax would have done had it been properly scutched.—Ed.

Joseph Hatrick, Parish of Templemore, first Premium, £2 10s.—(scutched at Cloughglass mill.) John Lithgow, Glendermot, second ditto, £2—(Ardlough mill.) Wm. Osborne, Killea, 3d ditto, £1 10s.—(Altaghaderry mill.) Hugh Stevenson, Taughboyne, 4th ditto, £1. Sam. Blair, 5th ditto, £1—(Dungorkin mill.)

CURRENT PRICES IN DERRY.

Oatmeal	...	12	0	*to*	13	0	*pr cwt*
Oats	...	0	8	–	0	10½	*pr st.*
Barley	...	0	12½	–	0	0	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3½	–	0	5	*pr lb.*
Mutton	...	0	3½	–	0	4	
Veal	...	6	5	–	0	8	
Butter	...	0	9	–	0	10	*pr 18oz*
Firkin Butter,	*1st*	95	0	–	0	0	*pr cwt.*
Do.	*2d*	89	0	–	0	0	
Do.	*3d*	73	0	–	0	0	
Flax undressed		37	6	–	62	6	*pr cwt.*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	41	0	–	65	0	*pr cwt.*
Pork	..	41	0	–	46	0	*pr cwt.*

☞ By order of the General Committee of the North West Society, I hereby request a Meeting of the Society, at Londonderry, on Monday the 17th instant, to prepare an application to Parliament for an Act to make a Canal from Derry to Lough-Erne.

W. MARSHALL, *Sec.*

Derry, 11th January, 1825.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

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COVENANTS FOR A LEASE.

MR. EDITOR—The answers to the queries in your last, No. 7, signed a Fermanagh Farmer, are, in general, judicious and correct.—Respecting query 4th, I agree, that restrictive covenants, such as he describes, are injurious; at the same time, I beg leave to observe, that certain covenants, such as I shall presently suggest, are not only advantageous to both landlord and tenant, but would conduce powerfully to the prosperity and happiness of Ireland: in fact, we want some coercion to break up the incorrigible, slovenly, and destructive habits so universal amongst our farmers, chiefly with regard to a proper rotation of crops, neglect of draining, &c. I shall now proceed, without further preface, to propose such covenants as appear applicable in most cases. Existing prejudices must, no doubt, render it extremely difficult to introduce them generally, but the same prejudices have been overcome in Scotland, for it is well known, that when such covenants were originally proposed there, most tenants gave up their farms; whereas, at present, Scotch tenants are so convinced of the mutual benefits arising from such covenants, that no lease is considered good without them. But, to proceed with the covenants.

First.—The tenant shall not sell, let, or subdivide the farm without the written permission of his landlord.

Second.—The tenant shall fence, drain, and keep the existing fence in good order, and straight marches, if necessary; or, in default thereof, the landlord may cause the necessary fences, drains and marches to be executed, at his own expense, and charge the tenant at the rate of five per cent on the money so expended. Such interest to be payable with the rent, and recoverable in like manner.

Third.—In extensive farms it may be well for the tenant to insure the houses for at least half their value. The landlord to pay the other half—and, in like manner, as much of the crop and live stock as shall be equal to half a year's rent, should be insured—but if the tenant shall refuse or neglect to insure, the landlord may do it, and charge the expense to the tenant.

Fourth.—The tenant shall never have more than one half of the arable land under a white crop, under which shall be included, wheat, oats, barley, rye, &c. and also flax; and in no case shall more than two of such white crops be taken in immediate succession, without the intervention of a green or herbage crop, such as clover, mangel wurzel, drilled potatoes, turnips, cabbage, beans, vetches, peas, or any such hoed crops, or else a summer fallow; such green crops, or summer fallow, shall always be properly tilled and manured. The tenant shall not, on any account, during the last four years of his lease, sow two white crops in immediate succession, but only one of such alternately, with a green or hoed crop, or a summer fallow.

Fifth.—In the third year before the end of the lease, the tenant shall have, at least, one sixth part of the arable land either under a summer fallow or a green crop, with a due proportion of manure; and in the following year, shall sow with a corn or flax crop, grass seeds fit for hay or pasture, which grass land (once laid down) shall not afterwards be ploughed or broken up by the tenant during the lease.

Sixth.—In the second year before the end of the lease, the tenant shall have another sixth part of the arable land under a summer fallow or green crop, well manured; but the landlord shall, in this case, furnish proper grass seeds, to be sown with the tenant's corn the last year, which grass seeds are to be harrowed and covered in by the tenant, and afterwards preserved from pasturage of cattle or damage, by the tenant during his lease.

Seventh.—In the last year of the lease, the tenant shall have at least *one sixth part of the arable land under either a summer fallow or a green crop, properly dressed; but the landlord shall, in this case, deduct the one sixth from the reserved rent as compensation for the fallowing and manuring; or in case of a green crop, the landlord shall not only supply the necessary seeds, but shall also deduct one sixth from the rent, as in the case of a summer fallow; he shall also pay to the tenant one-half the value of the manure used in either case, according to the valuation of arbitrators.

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* Some leases specify one fourth.

Eighth.—The tenant shall not plough any pasture ground during the last year of the lease.

Ninth.—The tenant shall be bound to pay double rent for every acre treated differently from the mode above stated, which penal rent shall be recoverable in like manner as the original rent—the decision to be left to two arbitrators, with power to examine, on oath, as to the facts.

Tenth —The tenant shall not sell or remove off the premises during his lease, any manure, compost, or soil. The whole manure made on the premises after sowing the last crop, shall become the property of the landlord, upon paying to the tenant a fair value for the same, according to the valuation of two sworn arbitrators. A variety of other clauses respecting the preservation and planting of timber, repairing of farm roads, &c. &c. may be added. I merely send the above, by way of hints to landed proprietors, assuring them, that such covenants perfectly succeed in Scotland. CURTIUS.

☞ Lord Kames says "tenants, like kings, ought to be fettered; but not so fettered as to bar improvement, nor yet left at liberty to do mischief."

RAILWAYS.

(Continued from page 64.)

It will be convenient to give a short summary of the propositions already laid down respecting the motion of bodies on Railways viz:—

1 The resistance to the motion of a body, arising from friction is the same for all velocities.

2 It follows that a body impelled along a railway by any constant power greater than the resistance caused by friction, will have its motion continually accelerated in the ratio of the squares of the times. For instance a body so impelled, which travels one foot in the first second, will travel three feet the next, five feet in the third, seven in the fourth, &c. Its motion if not strictly conformable to this principle, will at least nearly approach to it.

3. Hence also if the power expended in starting the moving body at first (*i. e.* in overcoming its inertia), is saved by an impulse given at the moment of starting, the body will proceed exactly as it would have done, had it arrived at the same degree of velocity by its own accelerating power—that is, it will not only maintain the high velocity thus given, but increase it. In other words, the same constant power which would maintain a velocity of two miles; would equally maintain a velocity of twenty miles an hour. Here observe, we take no account of the resistance of the air.

We are afraid some practical men will be disposed to treat these propositions as idle speculations. We confess this does not at all abate our confidence in their truth. We know that no useful improvement has ever been introduced, without a hard struggle with prejudiced ignorance, which is a kind of resistance more intractable than the vis inertiœ of matter. The most sanguine speculator, in our opinion, is often less offensive and less wrongheaded, than your thorough-paced practical man, who is often incorrigibly attached to his own little notions, and stubbornly incredulous as to every thing beyond them.

It may be objected that we see nothing of the constant *increase of speed* alluded to, in the motion of a waggon on a level railway or common-road, (to the latter of which the laws of friction apply as well as to the former.) But this is easily explained. The friction is always the same, the power of the horse's draught varies. Suppose that a force of 90lbs would exactly balance the friction, and that the horse begins to draw with a power of 100lbs. at two miles an hour, the accelerating force is then 10lbs. the horse, if he does not spare himself, will quicken his pace, perhaps, till he is travelling at the rate of three miles an hour. But though he uses the same exertion now, he pulls only with a force of 81lbs. while his friction requires 90. He will therefore slacken his pace gradually till he pulls with a force of 90lbs. which is equal to that of the friction. The horse may either adjust the effort to the resistance in this way, or he may save his strength by walking slow, and pulling with a smaller force.

Every body knows that the rate of stage-coach travelling has increased within the last 25 years, and this too before the roads were Mc Adamized, and with much less injury to the horses than was anticipated. Suppose that a coach-horse could run 14 miles unloaded, with the same muscular exertion which carries forward the coach at eight or nine miles. Each horse would draw with a force of 48lbs. at six miles, and of 27lbs. at eight miles an hour. But if the friction increased in proportion to the speed, the load upon each horse would increase from 48 to 60lbs. when the speed increased from six to eight miles an hour; and as the horse exerting the same strength, would only pull with a force of 27lbs. he would thus have more than double work to do, which is plainly impossible. But admit that the friction is uniform at all rates of going, then since the time is diminished one-fourth by increasing the speed from six to eight miles an hour, the horses will actually have one-fourth less to do; the load upon each is reduced from 48 to 36lbs. However strange then it may sound to common observers, it is practically true, that a smaller absolute amount of force will drag a coach over the same space in 3 hours than in four, and in one hour than in two.

Common roads, however, vary so much in the nature of their surface and their inclination, that the results cannot be accurately calculated. With railways the case is otherwise; and we shall now show how the effects of a certain force upon a horizontal railway is to be computed. Let us then suppose that a force of draught equal to 200lbs. is applied on a railway to a machine weighing, with its load 30,000lbs. of this force suppose 100lbs. to balance the friction, of course the remaining 100lbs. are applied to the acceleration of the machine. Now the accelerating force of 100lbs. is equal to the 300th part of the body to be moved. The machine will therefore advance the 300th part of 16 feet in the first second; through three times this fractional space in the next second; five times the same space in the third second &c. By pursuing this calculation we find that the machine will travel $8\frac{1}{2}$ miles in fifteen minutes, 33 miles in half an hour and 130 miles in an hour. This is leaving out of the question the resistance of the air which retards the motion from its commencement, and at length renders it uniform, no matter how great the moving power. It is to be observed that with an accelerating power of double the supposed one (200lbs.) the space gone over would be double, with a treble force, it would be treble.

Had we always a perfect calm in the atmosphere, we could impel fifteen tons along a railway with a velocity of fifteen or twenty-two miles an hour (according to the extent of surface presented by the front of the vehicle,) by a force of 133lbs. We may now compare the resistance of a railway with that of a canal or arm of the sea in a calm atmosphere.

According to the table before given, the force required to propel a vessel weighing with her load fifteen tons through the water at different velocities, would be as follows: viz.—

At 4	miles an	hour	133lbs.
At 6	do.	do.	300
At 8	do.	do.	533
At 12	do.	do.	1200
At 16	do.	do.	2133

On a railway, we have merely to add to the power required to overcome the friction (100lbs.) a few pounds more to balance the resistance of the atmosphere at the velocity required. For the steam-coach with thirty feet of front it would be as follows:

At 4	miles an	hour	102lbs.
At 6	do.	do.	105
At 8	do.	do.	109
At 12	do.	do.	120
At 16	do.	do.	137

We see by this table the astonishing superiority of the railway over the canal, for all velocities above four miles an hour.—Nearly three times as much power would be required to move an equal mass, at six miles an hour on a canal as on a railway; five times as much power would be required at eight miles an hour, and ten times as much at twelve miles, and fifteen times as much at sixteen miles an hour. It is evident also, that an addition of power too trifling to add any thing material to the weight of the vehicle, would raise the uniform velocity from four miles an hour to twenty; and that speaking practically, it would cost no more to command a velocity of twenty miles an hour on a railway than a velocity of one. Except for the chance of injury to the railway or the vehicle, there would not be the smallest reason for conveying goods, even of the coarsest kinds, at four miles, rather that at twenty miles an hour!

But a perfect calm in the atmosphere is very rare, and vehicles intended for daily and constant use must be prepared to contend with the strongest winds. The power must therefore be increased to such an extent, as to enable the vehicle to travel at its wonted pace in all weathers. Now, according to Mr Smeaton, a hard gale sweeps over the earth at the rate of from forty to fifty miles an hour.—This velocity which would be increased to sixty or seventy by that of the coach travelling at twenty miles an hour, would produce a resistance of 600lbs. upon the thirty feet of front of the steam-coach. With a speed of eight miles an hour, the coach would encounter a resistance about one half less.

In discussing this subject so much in detail we have perhaps exceeded what is suitable to our limits; but it is singular that so far as we know, the application of the laws of friction to the motion of carriages on railways has scarcely ever been investigated. Yet the subject is of vast importance, and the results extraordinary. Among all the new projects and inventions with which this age teems, there certainly is not one which opens up such a boundless prospect of improvement, as the general introduction of railways for the purpose of commercial communication.—We have spoken of vehicles travelling at twenty miles an hour, but we see no reason for thinking that in the progress of improvement, a much higher velocity may not be found practicable. Tiberius travelled 200 miles in two days, and this was reckoned an extraordinary effort; but in our times a shopkeeper or mechanic on the most ordinary occasion, travels twice as fast as the Roman Emperor; and twenty years hence he may probably travel with a speed that would leave the fleetest courser behind. Such a new power of locomotion cannot be introduced, without effecting a vast change in the state of society. With so great a facility and celerity of communication, the provincial towns of an extensive empire would become so many suburbs of the metropolis; or rather the effect would be similar to that of collecting the whole inhabitants of a country into one city. Commodities, inventions, discoveries, opinions, feelings, would circulate with a rapidity hitherto unknown, and above all, the personal intercourse of man with man would be prodigiously increased. Were the ugly despotisms that retard civilization on the continant annihilated, Europe might be made as it were one family, by such a system of internal communication.

The present season has been very favourable for farming operations. We take the liberty of suggesting some remarks on the following topics, viz:—

Manure—From the little frost we have hitherto experienced this season, its influence may be now expected to prevail, and perhaps with severity—every opportunity should, therefore, be taken to put out manure, particularly on wet lands—the sooner it is now spread on meadow, the greater will be the eventual increase.

Draining—Very particular attention should now be paid to finishing and sinking to a proper depth the drains begun last month, so as to have the soakage all run off before spring, that they may be then scoured and covered in.

Fences—This is a proper time to plash old ditches, and all intended new ditches should be made during this month only quick high—they should be quicked in February and March, and finished in dry weather.

Farm-yard—Attention should be paid to keep a regular supply of straw in the farm-yard, and the greatest circumspection observed to prevent waste. Any hay not cleanly eat by feeding the fat cattle, should be given to the stores, in the straw-yard, and the refuse turnip, rape, or cabbage, should be employed in the same manner.

Sheep—In this month it may be expected that ewes will begin to lamb—great care should be taken of them, both before and after yeaning—they should be well fed with hay and turnips, and kept in a dry sheltered situation—If the farm lies low and damp, the sheep should have a well lttered yard, and airy houses or sheds—there should be separate ones for the yeaned ewes, and those likely to drop soon; but few of the ewes that have not lambed, should be put together lest the lambs be injured from pressure or accident—When the farmer feeds sheep for market, to prevent waste he should have two flocks—one lean, to follow the fattening sheep which not only tends to improve them, but also accustoms them to green food—Fattening sheep will not eat clean, and according to the common mode, their refuse is totally lost. Folding sheep, though considered beneficial, in some measure, to the land, is by no means advantageous to the flock, in those particulars upon which the profit derivable from that stock essentially depends.

Lambs are subject to distempers soon after their birth, which have received many hard names, and for which a variety of absurd remedies have been prescribed—they proceed generally from exposure, or indigestion from repletion; in the first case artificial warmth, judiciously applied, is the best cure; and for the second, purgatives, and a proper regulation of their appetites subsequently. Common salt is found an excellent preventative, as well as remedy—It empties the bowels without materially relaxing the strength—and removes those crudities, which, from over-feeding while the powers of digestion are weak, are generated in the stomachs of most young animals—Their instinctive love of salt, points it out as the natural and appropriate relief; and if people would more steadily follow such palpable indications, and reject the contemptible and injurious expedients of quackery, they would essentially advantage themselves, and rescue the animals under their care, from a series of the most cruel, painful, and destructive experiments.

Dairy—Care should now be taken of the in-calf cows, to have them in strong condition —they should be kept in a very airy house, not warm, to prevent their casting calf, which cows in high condition, kept too close, are apt to do—It is deemed adviseable to have cows to calve at the time ewes begin to yean, so as to feed all twin lambs, as it is not found advantageous to rear two lambs on one ewe—Plenty of milk (as we before observed in our article on sheep, to which we again refer our readers,) should be therefore provided, not only to meet this exigence, but to supply the deficiency arising from those ewes which have not, as it sometimes happens, milk enough at first for the lamb, although afterwards it comes in abundance—a sufficient supply of cows' milk, is thus found eminently serviceable, in adding considerably to the flock, by enabling the farmer to support the weak lambs, and to succeed in the difficult task of rearing the twins.

Fattening Cattle.—The feeding cattle in the stalls, should now be particularly attended to—they should be kept clean, dry, and well littered—A succession of food should be supplied, so varied, that their stomachs should not be cloyed, and their appetites abated by the continuance of any particular kind—hay, rape, turnips, and steamed potatoes, under this regulation, are found to answer well.

Threshing—It is necessary now to keep a constant and regular supply of fresh straw, for the cattle in the yards; old threshed straw will not answer. The expenses of threshing in the common mode, are great, and the inconveniences numerous; we pointed them out in a former number, and therefore again strongly recommend to farmers, the erection of threshing machines, with powers proportioned to the extent of their farms.—We have made enquiries relative to those manufactured by a native, and very ingenious artist, Mr. Robert Hall, 24, Smithfield, Dublin, and find they have uniformly answered the expectations of the purchaser.

Young Cattle.—The last year's calves should now be well taken care of—if hay is not plenty, they may be fed with fresh straw, turnips, cabbages, rape, or potatoes.—Cattle of different ages should not be left together, as the older keep the young ones from the fodder. The younger the cattle, the more they demand attention.

Horses.—The working horses (the number of which might be materially diminished, if oxen were substituted) now require great care, and good feeding—they should always be ready for work, and constantly kept to it, as the expenses they bring along with them, are very considerable.—By a little foresight on the part of the farmer, this can readily be accomplished, and if he does not exercise it, he will find himself a considerable loser.

Furrows.—In all the wet, damp land, where clover or other seeds have been sown, care should be taken to examine the furrows, to see that there are no obstructions to the passage of the water.

Watered Meadows.—This is a proper time to water meadows, having the advantage of floods occasioned by heavy rains or thaws.—The meadow should be well floated, to protect the ground from the severity of the frost—It is necessary, however, every ten days or a fortnight, to give the land air, and to lay it as dry as possible—attention should be paid to the equal distribution of the water.—*Irish Farmers' Journal.*

IMPROVING WASTE LANDS.

(Concluded from our last.)

Another instance of the author's improvement without manure, is of a general nature, and ought to be well considered; and here likewise the drill husbandry may be of singular use. I proceed, says he, to the consiration of the improvement of such lands that are so circumstanced, as not to be within the reach of the common or usual method of improvement. Most large estates have very large qantities of land that lie remote from the farm-yard; sometimes several miles, and often very difficult of access, on account of steep hills and bad roads; therefore, such lands have no chance to be manured with dung, ashes, lime, or any such thing, the carriage of which would come high; and therefore they are considerod as waste lands, not worth more than half a crown an acre, and are therefore suffered to be overrun with brambles, broom, or furze, from one generation to another, though very capable of bearing very good corn, if proper methods were pursued. I have, at this time, several hundred acres exactly thus circumstanced, which serve to no other purpose but to summer a few sheep and cattle. These are the uses those lands have been put to for a great number of years; and as their condition is no better than formerly, no body considers them of more value; and consequently I can get no more rent for them. I have therefore taken several of them into my hand, with a determined resolution to improve them if possible: which I have not the least doubt of effecting. I cannot convey an idea of my method better than by an account of the course I am now pursuing.

My first essay was on what is called an "over-land" (that is, land without a tenement belonging to it,) of above sixty acres; thirty of which lay on the north side, of a sharp valley. The descent on one side, and the ascent on the other, are so quick, that it is not practicable to carry any manure to the said 30 acres, but on horses' backs; the expense of which would be too great for it to answer. The last tenant had left it in woeful plight, having, as he said, ploughed it as long as he could get two corns for one—miserable condition indeed? The first two years I left it to the management of my hind, who cleaned it, and sowed it with every sort of grain; but the return was such as left nothing for rent. At length he told me, it was to no purpose to plant it any more, unless I would be at the expense of bestowing a good dressing upon it, to improve it.—This I resolved not to do; for I had no idea of any thing being an improvement, that does not pay the extra expense, and increase the nett profit. Indeed, you may increase the quantity of produce, and put the land into better condition; but if, to effect this, you are at more expense than the improvement will repay, I must call this measure the reverse of improvement—for though your land may be improved, your fortune is impaired: this indeed would be buying gold too dear.

I therefore told him, I saw clearly it would never answer the expense of carrying manure into it; I would try another method from which I hoped better success than he had met with; he answered, he wished I might, with a smile that plainly denoted his incredulity. So averse are most of these people to every method they have not been accustomed to.

However, he was to follow my directions. I said to him, you see, here are the two upper fields (about eleven acres) have now lain above a year since the crops were got off; they have nothing growing upon them but strong weeds, which are the natural produce of the soil, as thistles, horse-daisies, brambles, &c. these are first to be eradicated: therefore set a couple of strong ploughs to work, six oxen to each, plough the two fields deep and well; then let them, as soon as proper be well dragged, rolled, and harrowed, and the ploughings, &c. repeated, until the land is clean, well-opened, and pulverized. This was repeated at proper intervals through the winter and until the following May. By that time, they were got tolerably clean, and in good condition. The soil of each of these fields was very different, though no larger; they each consisted of some very dry land, and some altogether as wet. The first was a poor, lean, slatey ground; the latter a tough, moory, close earth, mixed with an imperfect marle, which held water like a dish. I had a pit sunk in the most depending part, to drain off the water; and ordered the earth to be spread on the slatey ground at a proper time. As I said, the land was in good order the May following, I therefore ordered the moist parts of the fields to be sown with rye-grass, and the dry part with trefoil and burnet: which, as soon as pretty full blown, I ordered to be mowed, made into hay, and set up in a rick, in a corner of the upper field. The fields to be then laid up until October, or until the grass had done growing; then to turn into the said fields half-a-dozen mares and their foals, which I had at that time, with some young cattle, to have the run of the said thirty acres during the winter. I also ordered a linny, or hovel, to be erected in the most sheltry part of the fields, large enough to shelter a dozen horses under it, for them to go into at pleasure; a rack to be put up; and when the grass was nearly eat up, to cut the rick, and fill the rack once or twice a day, as might be necessary; also to carry straw to litter the hovel, which should be cleaned out once in a week or ten days, and a dung-heap formed of the same. In this manner the cattle should remain until the end of February, or until the grass began to spring.

Whilst this is doing, another of the fields should be ploughed and got ready to sow in like manner the following May. As the extent of the pasture will be increased, so may the number of cattle to be wintered on it; and, at the beginning of the second winter, there will be dung enough to manure one of the fields, which I would have spread on the upper field in December or January at farthest; by which means, I hope to have another good crop of grass. Thus are you to go on year after year, and field after field, until the whole has been well cleaned, cultivated and dressed.

I do not expect it will answer to let it lie for grass more than two or three years; therefore, in the winter after the first year, I would have dung spread on the field or fields that were mowed, which will give encouragement to the next crop, and leave it sufficiently in heart to bear a crop of barley or oats, with which I would have you sow either clover, rye-grass, or trefoil, as best suits the land, takiug but one crop of corn to two of grass, which cannot fail of improving those lands, as I would have them constantly fed in the winter as above directed; and the dung that is made by the cattle to be used for manuring that land only; for it is a kind of injustice, if one may so speak, to carry the produce off, and not leave the manure that arises from it, and is its natural due; a robbery that is too frequently committed, which keeps such land in a perpetual state of poverty.

These 50 acres, in the condition I first found them, were not worth more than half-a-crown an acre; but, by the above management, are well worth ten shillings at least; and by the same means are capable of much more improvement. This in my own opinion. is a species of improvement that deserves the closest attention; as perhaps there is not another to be found, which may in general be made so advantageous and extensively useful. It comprehends every kind of land that is capable of improvement, and the distance from the farm yard is no very great inconvenience, as all the labour it requires on that account is only going once a-day to give the cattle fodder, and spread some litter, and this not until the grass is gone, and the weather severe; then the litter is necessary to increase the quantity of dung, as well as to be of use to the cattle. By such management, land that is very indifferent in its natural state may very soon be made very good corn land, to the great advantage of the owner.

This is an uncommon and very valuable species of improvement, not only in regard to the value of the improvement, which is very great, but with respect to its extensiveness, as there is not a county only, but scarce a parish in the kingdom, but this may be of great use to: and it is here inserted at length, not only for that reason, but also because this method may be improved by the hoeing husbandry.—ULSTER MECHANIC.

* * *

In Ireland the population is much denser than in any other part of the kingdom.—The average population per square mile of the four provinces of Ireland was, in 1821, as follows:—Leinster, 403; Munster, 367; Ulster, 408; Connaught, 270. The average of all Ireland 365 per square mile. The population of England and Wales was only 210 4-5ths to the square mile; of Scotland, only 86; and of Great Britain altogether less than 170. It will be observed that Ulster is the most densely peopled of the Irish provinces. Its population is the more remarkable, from the small number of large towns. Belfast, which has 37,277 inhabitants, is the only place which has above 20,000 in a province of near two millions. In the county of Monaghan, where the population is 624 per square mile, there is nothing deserving the name of a town; and in Armagh, where there is 697 per square mile, the town, which is dignified with the name of a city, bears an insignificant relation to the number of people in the county. So dense a rural population as that of Ireland, taking into account the poverty of it, is not to be paralleled in Europe.

* * *

Premiums given by the Linen Board for cleaning and making up Flax for sale in the market of Londonderry—Jan. 12, 1825.

Mr. Joseph Thompson, parish of Templemore, 1st premium, £2 10s. (scutched at Farm-hill mill)—John Douglass, Glendermot, 2d do. £2, (at Millburn mill)—Samuel Alexander, Glendermot, 3d do. £1 10s. (Farm-hill mill)—Mathew Grier, Templemore, 4th do. £1, (Tubberlane mill)— Archd. M'Cay, Killea, 5th do. 1*l*.

There were nine competitors, and it is but justice to them to say, that their flax was brought to the market in a manner highly creditable.

Some strictures appeared in a late number, on Mr. Ogilby's character as a landlord.—The Editor of this work, (as was then mentioned,) was not the author of them; they are extracts from a work published some years ago by Mr. Slade, of London. But, as we have contributed to their publicity, we feel it incumbent on us to say, from good authority, that Mr. Ogilby's estate is not in the denuded condition which has been represented, and that his character is that of an indulgent landlord.

* * *

CURRENT PRICES IN DERRY.

Oatmeal ...	13	0	*to*	14	0	*pr cwt*
Oats ...	0	9	–	0	10½	*pr st.*
Barley ...	0	10	–	1	0	
Potatoes ...	0	2	–	0	2½	
Beef ...	0	3	–	0	5	*pr lb.*
Mutton ...	0	3	–	0	5	
Veal ...	0	4	–	0	10	
Butter ...	0	9	–	0	10	*pr18oz*
Firkin Butter, 1st	95	0	–	0	0	*pr cwt.*
Do. 2d	89	0	–	0	0	
Do. 3d	73	0	–	0	0	
Flax undressed	37	6	–	62	6	*pr cwt.*
Five hank yarn	2	9	–	3	4	*pr spl*
Four do. do.	2	7	–	2	10	
Three do. do.	2	8	–	2	11	
One do. do.	2	6	–	2	8	
Hides ...	41	0	–	65	0	*pr cwt.*
Pork ..	42	0	–	45	0	*pr cwt.*

* * *

⁂ The Corresponding Committee having inspected the Accounts relating to the Magazine, according to a resolution entered into at the last General Meeting, find that several subscriptions remain still unpaid.—The Committee request that all such outstanding debts may be discharged, without delay, in order to enable them to make out their Report.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

* * *

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. HEMPTON

N. W. SOCIETY'S MAGAZINE.

VOL. III.—NO. 10. WEDNESDAY, 26th JANUARY, 1825. Price 2d.

To the Proprietors of large Manufactories.

GENTLEMEN—I take this mode of addressing you on a subject in which you are deeply interested, conceiving it to be the most likely channel through which the communication I have to make, may reach you generally.

I believe there is no difference of opinion upon the question of giving education to the lower orders, or on the advantage of intellectual improvement in the humble condition of life: there has, in consequence, been for some time, a general desire to afford to the people the means of instruction, and schools for teaching reading and writing, have been multiplied in every part of the country.

But in merely teaching the people to read, we only open to them the door to knowledge,* and unless we can induce them to pass the portal, the stores that lie within will remain useless to them. The people of the different Asiatic nations have for an unknown period of time, had the advantage of being taught to read; but their languages supplying no practically useful works to which they could have access, no benefit followed the attainment, and they have not advanced their condition beyond what it appears to have been 2000 years ago, and have not been able to furnish one solitary contribution to those means which minister to human happiness and enjoyment.

The necessity, therefore, of doing something more than merely teaching people to read, has not latterly escaped observation. Libraries supported by subscriptions and donations from the higher orders, have been formed in different places for the use of mechanics and artisans; and establishments for teaching them the branches of science, connected with their respective employments, upon the plan of the lectures given to mechanics in the Andersonian Institution here, have been made in Edinburgh and London, &c. All this is in excellent spirit, and calculated to to do much good. But to make *these* measures effectually and permanently useful, I am satisfied from the observations which I have had an opportunity of making, that these establishments, after they are once set a going, ought to be supported and conducted, in a great measure by the people themselves, in place of being managed, as is the case at present by their superiors.

We have had sufficient experience of the progressive relaxation which takes place in the management of public institutions, by gratuitous directors from the higher classes, after the fervour which has set the machine in motion has begun to subside; and the apathy with which the common people are apt to receive every thing that is done by others for their benefit, is matter of daily complaint. *But whenever they can be led to consider the undertaking in which they are engaged as their own, its success never ceases to be an object of interest to them.* The importance too which attaches to the management of such a trust, gives rise to honest feelings of self-respect, which besides its being highly valuable on a higher consideration, have their weight in keeping up the lively interest I have mentioned.

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* The Rev. J. Doyle P. P. of Bray gives some wholesome advice to the Catholic Association on this topic. In a letter addressed to D. O'Connell, he recommends that funds should be appropriated for the advancement of Education. He observes very truly, that the want of cultivation observable in Ireland, arises not from the ignorance of letters, which are and have been generally known; but from the want of such books as might open and exalt the faculties, and correct depraved dispositions. These they either have not had at all, or only can have on such terms as effectually locked them up from the lower and middling orders of the people, and from this cause, multitudes who had learned to read, were become quite incapable of it before they had arrived at the meridian of life. Equally true, is his remark, that the adult part of the population, cannot be adequately instructed in the knowledge of their moral and religious duties by the short and desultory exhortations of clergymen, constantly employed in active duty, and disabled from fasting and fatigue on Sundays, to enter deeply and at length into any subject.

The most remarkable part of this letter, and the most creditable to the candour and judgment of this gentleman, is the very high euloguim which he pronounces on the Kildare-street Society. "Notwithstanding the objections (says he) that lie against the Kildare-street Association, they have shewn singular industry, and judgment in the collection and adaptation of their library generally speaking; and their works, with a little trouble of revision and correction, may be rendered perfectly available to your purpose." Sincerely do we hope that there are many among the Romish Clergy, animated with a spirit so candid and liberal; there may now be some prospect of a general co-operation of sects now hostile, in the great work of national education, uniting their exertions to emancipate the *people from the worst thraldom—that of vice and ignorance.*

These consequences which we see taking place in the opposite systems of management, I have noticed, flow alike from principles inherent in our nature, and serve to shew us, that the more closely we can frame our measures for the people, in correspondence with their natural feelings, the more permanently successful they are likely to be.

I now proceed to give you an account of a little institution formed here for the improvement of a single body of workmen, the history of which will show what is possible to be accomplished by each of you in the business of education, independent of what may be effected by the greater general establishments I have mentioned; and if I am not mistaken, it will open up views with regard to the instruction of the people, more efficacious, more easily executed, and more practically applicable to the end, than any we are yet acquainted with.

The Gas light chartered company of this city, in which I hold a considerable interest, and of whose committee of direction I have been for some years a member, employ constantly between sixty and seventy men in their works. Twelve of these are mechanics, and the remainder furnace-men and common labourers of different descriptions, forming altogether a community not very promising, as a body to be incited to adopt measures for their own improvement.

A little more than three years ago, our manager at the works, Mr. J. B. Nelson, proposed to these men to contribute each a small sum monthly, to be laid out in books to form a library for their common use; and he informed them, that if they agreed to do this the company would give them a room to keep the books in, which should be heated and lighted for them in winter, and in which they might meet every evening to read and converse, in place of going to the alehouse, as many of them had been in the practice of doing. That the company would farther give them a present of five guineas to set out with, and that the management of the funds, library, and every thing connected with the measure should be entrusted to a committee of themselves, to be named and renewed by them at certain fixed periods.

With a good deal of persuasion, Mr. Nelson got fourteen of them to agree to the plan, and a commencement was then made. For the first two years, until it could be ascertained, that the members would have a proper care of the books, it was agreed that they should not take them out of the reading-room, but that they should meet there every evening to peruse them. After this period however, the members were allowed to take the books home; and last year they met only twice a week at the reading-room to change them and converse on what they had been reading. The increase of the number of subcribers to the library was at first very slow, and at the end of the second year, the whole did not amount to thirty. But from conversing with one another twice a week, at the library upon the acquisitions they had been making, a taste for science and a desire for information began to spread among them.

They had, a little before this time got an Atlas, which they say led them to think of purchasing a pair of globes; and one from among themselves, Alexander Anderson, by trade a joiner, who had the advantage of attending two courses of lectures in the Andersonian Institution, volunteered about the beginning of last winter, to explain to them on the Monday evenings, the use of the globes. Finding himself succeed in doing this, he offered to give them, on the Thursday evenings, an account of some of the principles, and processes in mechanics and chemistry, accompanied with a few experiments. This he effected with a simplicity of illustration and usefulness of purpose that was delightful. He next undertook, along with another of the workmen, to attend in the reading-room during the other evenings of the week, and teach such of the members as chose it arithmetic.

For the business of this season, the members of the society, who conduct every thing themselves, have made a new arrangement.

The individuals of the committee have come under an agreement, to give in rotation a lecture, either in chemistry or mechanics, every Thursday evening; taking Murray for their text-book in the one, and Ferguson in the other. They intimate a fortnight before to the person whose turn it is, that he is to lecture from such a page, to such a page of one of these authors. He has in consequence these fourteen days to make himself acquainted with his subject, and he is authorized to claim during that period, the assistance of every member of the society in preparing the chemical experiments, or making the little models of machines required for illustrating his discourse.

It is a remarkable circumstance in this unique process of instruction, that there has been no backwardness found on the part of any of the individuals to undertake to lecture in his turn, nor the slightest diffidence exhibited in the execution, this I can attribute only to its being set about without pretension or affectation of knowledge, and merely as a means of mutual improvement: and nothing I conceive could have been better devised for accomplishing this end. Indeed I might with confidence say, that under this simple system of mutual instruction, these persons, many of whom when they joined the society, were in a state of ignorance, have acquired a clearer idea, and more perfect knowledge of the subjects which have been brought under their consideration, than would be found to have been obtained by any similar number of students, who had been attending the courses of lectures given in the usual way of the most improved lectures.

On the Monday evenings the society has a voluntary lecture, from any of their number who chooses to give notice of his intention, on either of those branches of science, or upon any other useful subject he may propose; and there is with the general body, the same simple unhesitating frankness and disposition to come forward in their turn, that exists among the members of the Committee with regard to the lectures prescribed to them.

I think it will be interesting, and may not be without use, to mention particularly the subjects of the different lectures, that have been given since this plan was adopted.—They commenced in the month of September, and are as follows;—

1 Upon solidity, inactivity, mobility, divisibility.
2 Attraction, cohesion and repulsion.
3 Attraction of gravitation.
4 Centre of gravity—Expansion of metals.
5 Magnetism and electricity.
6 Central forces—all motion naturally takes a rectilineal line.
7 Mechanical powers.
8 The lever, wheel and axle.
9 The pulley.
10 The wedge and screw.
11 Wheel carriages.
12 The primitive form of crystals.
13 Hydrostatics.

The voluntary lectures began at the same time and were as follows:—

1, Upon the air-pump: 2, Electricity: 3, An introduction to chemistry, principally to shew chemical affinity: 4, The Atmosphere: 5, The corn mill: 6, Coal mining: 7, Practical observations on the blasting of whin rock: 8, Boring, sinking and mining—Sir H. Davy's lamp: 9 and 10, The globes: 11, Navigating a vessel from the Thames to the Orkney isles: 12, Carbonic acid gas: 13, Captain Manby's invention for the safety of shipwrecked seamen.

The effect of all that I have been relating, has been most beneficial to the general character and happiness of these individuals, and we may readily conceive what a valuable part of the community they are likely to become, and what the state of the whole of our manufacturing population would be, if the people employed in every large work were enabled to adopt similar measures. What might we not then be entitled to look for, in useful inventions and discoveries, from minds awakened and invigorated by the self-discipline which such a mode of instruction requires?

The Gas Light Company, seeing the beneficial consequences resulting from the instruction of their work-people, have fitted up for them, this winter, a more commodious room to meet in for their lectures, with a small laboratory and workshop attached to it, where they can conduct their experiments, and prepare the models to be used in the lectures.—The men, last year, made for themselves an air-pump, and an electrifying machine, and some of them are constantly engaged during their spare hours in the laboratory and workshop.

The whole of the workmen, with the exception of about fifteen, have now become members of the society, and have been standing out upon the plea that they cannot read;

they are chiefly men from the remote parts of the Highlands, or from Ireland–but the others say to them—"join us, and we shall teach you to read :" and I have no doubt of their persuading them to do so.

The Rules of the society, which have been framed by the members themselves, are simple and judicious. Every person, on becoming a member, pays 7s. 6d. of entry money. This sum is taken from him by instalments, and is paid back to him again should he leave the gas-works, or to his family or heirs, should he die. Besides this entrance money, each member contributes three half-pence weekly, two-thirds of which, by a rule made this year, go to the library, and one-third to the use of the laboratory and workshop. By a rule made at the same time, which I think a curious indication of the change of feeling produced in these men in the short period since the commencement of the society, the members may bring to the lectures any of their sons, who are above seven, and under twenty-one years of age.

The books now amount to above three hundred volumes, and consist of elementary works of science, and of history, voyages, and travels, some of the standard poets, a few of our best novels, and Shakespeare's works. The selection of the books purchased by the library funds is, in general, creditable to the members of the society. They admit no books on religion into the library. The members say that there are among them, men of a variety of persuasions—Presbyterians, Seceders, Church of England men, and Catholics; each of whom would be for introducing books connected with their particular opinions, and thus give occasion to endless unprofitable disputes.

I hope you will agree with me gentlemen, in considering that there are valuable ideas on the subject of popular education to be gathered from the little history I have just given, and that what has been done by the people at the Glasgow Gas-work, is capable of being effected, not only by the workmen, in every manufacturing establishment, but in every part of the country where a few persons can be induced to form a society for mutual improvement. In places where there is a schoolroom the use of it might be had for one or two evenings in the week, and the books might be kept in presses, so placed, as not to incommode the scholars. The schoolmaster too, might probably make a valuable member of the committee. Where assistance was wanted to procure these accommodations, the pecuniary contributions of the more wealthy persons of the neighbourhood, for this end, would be doubly repaid to them, in the improved character of all around them. The course of mutual instruction to be adopted in these little societies, might be varied to apply to any pursuit in life, and each society prosecuting inquiry in the direction of the particular occupation of its own members, would, while they were improving themselves, be in the most likely state to furnish valuable contributions to the stock of general knowledge.

Since writing the preceding, I have read the excellent article in the last Number of the Edinburgh review, on the scientific education of the people, and am happy to find the general views I had been led to form on this subject, from what I had the opportunity of witnessing in the different establishments here, sanctioned and confirmed by this able and intelligent writer. Indeed, there is so much information collected in this article on what has been done, in different parts of the country, in instructing the people, and so many suggestions with regard to what may yet be effected, that it is to be wished that it could be printed separately, and circulated in every quarter of the country.

DUGALD BANNATYNE.

Glasgow, Dec. 25, 1824.

To the Editor of the North West Magazine.

SIR—As the appellation of a "Mechanics' Institution" may, with some, produce an erroneous idea of the nature of the establishment proposed in your Magazine of December 29th, 1824, and convey the impression that its usefulness is meant to be confined to that class only, I think it may be proper to explain, that what is intended under that title, is an institution for a course of popular instruction in physics, mechanics, and chemistry—to which may be added, as occasion prompts, political economy, botany, &c.—Thus offering, to the whole community, an opportunity of acquiring a knowledge in science, which formerly could not be procured but by an attendance on lectures at one or two of our universities.

The origin, I may say, of all these institutions in Britain, which bid fair to produce one of the greatest revolutions, to the advantage of man, to be found in the history of human society, took its rise from an evening course of lectures given in the university of Glasgow, by the late Mr. John Anderson, Professor of Natural Philosophy there. The beneficial effects of these, became so obvious to him, that he appropriated a sum of money from his private fortune, which he vested in trustees, to be applied, after his decease, to the giving of a course of similar lectures, to be open to the whole public. After his death, this purpose was carried into effect, and the Andersonian Institution was formed; from the success of which, as I have already said, have arisen similar establishments in most of the towns and cities of England and Scotland. In addition to these, we may see from the public papers, that they are spreading rapidly over the cities of the continent; and we may soon find them firmly fixed in every country, where the mind of man is not trammeled, and fettered, by institutions belonging to what are truly and emphatically termed the "dark ages."

In the Times newspaper, of the 3d January, will be found an excellent article on this subject, called forth on occasion of noticing a recent publication from the pen of M. Dupin, a Frenchman of great science, and well known as the author of a celebrated work on the state of England. The writer has taken the same view of the effects of education, on the lower orders, with your correspondent Colonus; and among other matters, truly observes, that "as the people become more intelligent, they are the less liable to be misled —superstitious errors lose their hold—quackery is hooted out of existence—the power of demagogues is annihilated—mobs and tumults occasioned by knavery working upon ignorance, are at an end; and as the great mass of society cannot be moved, but when their rights and privileges are in real danger, their union and zeal on such occasions must be irresistible"—but I recommend the whole article to be inserted in your very useful miscellany. An admirable analysis of the greatness of England and Scotland is also given, and a defence of them from the vulgar allegations of ignorant Frenchmen.

And now, let us turn our eyes to Ireland—let us view her comparative condition among the leading nations of Europe. If we consider candidly the efforts of her gentry—the toiling industry of her comparatively impoverished and ignorant peasantry, her state presents an anomaly in the political and rural economy of nations; and we exclaim, that there must be some latent curse, which thus blasts the united efforts of the high and the low—the rich and the poor. But here the enquirer recoils—he is instantly aware that he treads on trembling ground —he recedes, and leaves the cure to *time*, that sure but slow restorer of the natural order of mind and matter.

But will it be permitted to one who, altho' a stranger, feels deeply interested in the prosperity of your beautiful and fertile island, just to hint that it would be conferring a great and lasting benefit upon Ireland, were those patriotic gentlemen, who are so nobly and generously devoting their time and their labour to the advantage of their native country, to lend the powers of their intelligent minds to the moral and political condition of their fellow men—and, perhaps, *there* they may find the grand, the predisposing cause of the evil? Those who shall approach this momentous question, with the greatest power over their minds, in divesting themselves of every thing that can warp or prejudice their judgment, will soonest come at the truth—and by so doing, enrol their names, and interweave their fame with the future happiness and greatness of their native land.

There is one other subject to which I would beg to call their attention, the very great importance of encouraging the manufacturing and trading interests of the district. It may possibly make the consequences of this appear the more conspicuous, when I mention, that in a late survey of a district in Scotland, made for the purpose of procuring a water power for impelling machinery, the engineer takes the expenditure of each cotton mill at £10,000 per annum, the whole of which is thrown into circulation in the neighbourhood, among the farmers and the small shopkeepers. Here we see the sources of that extraordinary impulse, which has been given to the arts and agriculture of England and Scotland; and it is pleasing to know, that no part of the British empire possesses greater facilities for the establishment of manufactures and trade than the North West district of Ireland. The population is dense, sober, and industrious; and the neighbourhood of the sea presents the best opportunities for export.

Joint Stock Companies have been entered into, to an extent almost ludicrous; but here the gentlemen of the North of Ireland have a most judicious opportunity for an undertaking of this kind.

Let not the mind be damped from its being an experiment—for, if I am not mistaken, the origin of one of the staple manufactures of Glasgow took its rise from the accident of two young men, natives of that city, who were taken prisoners in one of those nearly about, or subsequent to, the battle of Fontenoy.—The place of their confinement happened to be in the north of France, where they had an opportunity to observe the processes used in manufacturing and dying a species of goods, fitted for the West India markets. This they brought home with them, and to so very trivial a circumstance is owing, as I have said, one of the principal manufactures in that great mart of commerce.

Look to whatever quarter we please, and we shall find that trade and commerce must precede and stimulate agricultural prosperity—otherwise a country must be as Poland, and the south of this island—with great exports of grain and other products of the soil, but with great internal poverty. The first named, as we all know, possesses a rich and proud aristocracy, but a nation of slaves.

But need we say, that commerce never will spread her fertilizing and humanizing influence over a land, until the absence of all discord shall produce confidence between man and man? Yours,

A. B.

Since writing the above, I have seen two articles in your Magazine, on this subject—I, to avoid all ambiguity, would suggest that the name for the proposed institution should be "The School of Arts."

Observations on Farming Establishments in Ireland—Great advantages of selecting proper Sites for Farming Houses, &c.

(From the Irish Farmers' Journal.)

Sir—It is an old remark in this country, that our ancestors never failed to build their houses near a good situation, and indeed the remark may as well be applied to the modern choice of laying out farm-lands and houses, with regard to the advantages that might in many instances be made use of to master the inconveniencies that too often stand in the way of agricultural establishments. It is somewhat singular to suppose common sense laid aside as it were, and to see a large farm, with the house and offices, erected perhaps at the very extremity of the farm, and at the boundary of an adjoining farmer's establishment, which very often creates quarrels and litigation, on account of the likelihood of trespasses arising from the contiguity—for however sufficient the fence may be, which indeed is seldom the case, against cattle, the very poultry will annoy the neighbour's property, and oftentimes occasion much disturbance. These glaring inconveniences are so seldom noticed, that even at the present day, it is no uncommon thing to see the rustic architect founding his establishment on the borders of his farm, with all the gravity and seeming determination of a man desirous to live in hot water—and along with this ignorant choice of family residence, the farm is generally laid out in a most inconvenient manner, as fields running in acute angles, and forms the very reverse of the advantages which the lands would afford by a systematic adjustment. Now, as farmers have enough to do to meet their rents and other engagements, surely all advantages should be duly considered, and the situation settled upon with all the precision that would seem to give comfort, quietness, and convenience. It is too notorious, that in isolated districts rustic litigation is every day the great work of the magistrate, as Darby will surely come to his honor with a complaint that Paddy Doyle's pig was rooting his potatoes, or his hens eating his oats—and the rustic litigants, in many cases, carry their complaints, even to the quarter sessions. However ludicrous this may appear, it is really a fact, that transactions of this kind so often occur, that the trespass act is more the magistrate's study than any other of the statutes for the preservation of the public peace; and if not all, at least the greatest share of this litigation arises from the causes above-mentioned. Regarding, therefore, the advantages and convenience that result from a well-chosen situation, and regularity of form for farm-lands, the establishment should be in the centre of the land, as in that case the distance for sending out manure and getting in the produce of the farm is shortened considerably, and the whole farm, in all probability, is thereby laid under the view of the owner, which, together with avoiding trespasses, &c. should be a paramount consideration for either the great or small farmer. The arrangements regarding the farm-yard, should be regulated according to the extent of the farm and the means of the occupant, always keeping in view the convenience of water, with a space for a garden and orchard, which in all cases should be inseparable from a farm establishment. If there are inequalities in the land, great nicety should be observed in laying them out, because the ground for arable purposes should be as free as possible from hills or hollows, and of all things laid out in regular forms for the advantage of the plough. Fields in regular square, and rectangular forms are the most convenient for every purpose of husbandry, and the inequalities should be laid out for grazing, &c.—Manuring being a prime consideration in all cases of farming, lands may be much improved by the following means: plant an early headland ridge of potatoes all around a field which will require but a small share of manure, as the headlands are the richest parts of the field, and when the potatoes are got out, dig off the surface of the ridge, and it will manure a large portion, or at least the poorest part of the field most efficiently, then plough and harrow the ridge space and sow it with hay seeds, and thus with much convenience an annual manuring may be followed up, until a great quantity of the poorest part of the premises will be completely improved, without any deterioration to the headlands, as cattle generally take shelter on them, and their droppings keep them in a better state than any other part of the land—besides the advantage of manuring, the potatoes will be of an improved quality for seed, if kept over for that very necessary purpose.

These observations, Mr. Editor, may be essential in the laying out of farms in reclaimed estates or tracts for new settlements, and should they meet with your approbation, so as to obtain a place in your useful paper, it will gratify A CONSTANT READER.

FLAX PREMIUMS—19th JANUARY, 1825.

1st Premium of £2 10s. to Mr. A. Brown, Parish of Templemore, (scutched at Cloughglass mill.) 2d Prem. of £2 to Mr. H. M'Cay, parish of All-Saints,(scutched at Nn-Cunningham mill.) 3d Premium of £1 10s. to Mr. J. M'Pherson, Parish of Templemore, (scutched at Killea mill.) 4th Premium of £1 to Mr. M'Clure, of Stranorlar, (scutched at Kilcadden mill.) 5th Premium of £1 to Hugh Lyle, of Oaks, Esq. Parish of Cumber, (scutched at Dungarvan mill.)

GARDENERS' CALENDAR FOR JANUARY.

Kitchen Garden.—Warm borders should be prepared for the reception of the early natural crops in the full ground, by manuring, when necessary, with proper dung, and giving a general good digging, ready for early peas, beans, radishes, spinach, &c.

Those who wish for melons, cucumbers, &c. should now make all necessary preparations, for being exotics of a tender nature, they require the aid of artificial heat, under the shelter of frames and glasses, until June or July.

Lettuce plants should be carefully protected from the severe weather; if *cos lettuce* is put out in a south border, it should, if possible, be covered in hard weather by hoop arches, defended by mats. All the decayed leaves should be picked off, and weeds cleared away—destroy slugs, and in mild weather, stir the surface of the earth between, which will assist the plants—about the second week, if the weather is open, sow green and white cos lettuce, common cabbage do. brown Dutch, and Cilicia kinds, all on a warm border, under a south wall, sloping to the sun—sow moderately, and rake lightly and evenly into the ground—about the latter end of the month, sow more of each kind—any time in this month, radishes may be sown, when the weather is open—the short topped kind is the most proper for an early crop—salmon radishes succeed the short topped, but the seeds should be sown separate; a small sprinkling of carrots or round leaved spinach or lettuce may be intermixed, to come in when the radishes are drawn off—the attacks of frost may be obviated by spreading straw over the young crops during the night, and drawing it off every day in mild weather—if they are carefully protected, they will be ready to draw in March—Early carrots may be sown in this month, a small quantity for an early crop—when an inch or two high, they may be thinned to about three inches asunder—Spinach also may be sown this month—a small quantity for an early crop; the smooth seeded or round leaved kind is the best for this season—parsley may be sown the latter end of this month—cauliflower plants in frames, should be carefully looked over; pick off withered or damaged leaves, and remove weeds carefully, and slugs.—When the weather is open, prepare some ground for cabbage plants—dig in rotten dung a spade deep, and plant out a moderate quantity of the strongest plants—the early sugar-loaf, York, and Battersea, are the most proper for this season on the ground—a small crop of spinach may be sown in single drills, between the wider rows, which will come in by April or May—transplant savoys and cabbages for seed; it will be still in time, though it should be done earlier—Celery, when the weather is open and dry, should be earthed up—the earth should be well broken, and raised to near the top of the plants—prepare to blanch endive, by tying the leaves together when dry—in a fortnight they will be ready for use. Ground should now be got ready for a main crop of broad beans—the Windsor and broad Spanish bean are reckoned the best—Hotspur peas may also be put down this month on a warm piece of ground—Artichokes, if not landed up before, should now be no longer neglected—wall and espalier apple and pear trees should now be pruned, and plums and cherries should be pruned and nailed.—As this is a matter that requires particular skill, money cannot be better employed, than in engaging a person fully competent to the task.—Gooseberry and currant trees should also be pruned—gooseberry and currant trees may also now be planted; and as their fruit is now by many families converted into wine, perhaps a more profitable speculation could hardly be entered upon—Raspberries may now also be pruned and planted.

Of flowers we need not recommend the care—their own exquisite beauty and scent, must render them the favourites of all those who love the harbingers of spring, and experience a never-ceasing delight in contemplating the beauty of that benignant Providence, which

> Throws out the snow-drop and the crocus first,
> The daisy, primrose, violet darkly blue,
> And polyanthus of unnumbered dies;
> Anemonies—auriculas enriched
> With shining meal o'er all their velvet leaves.
> Infinite varieties, delicacies, smells,
> With hues on hues expression cannot paint
> The breath of nature, and her endless bloom.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt*
Oats	...	0	9½	–	0	11	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3	–	0	5	*pr lb.*
Mutton	...	0	3	–	0	5	
Veal	...	6	6	–	0	10	
Butter	...	0	8	–	0	10	*pr 18oz*
Firkin Butter,	*1st*	95	0	–	0	0	*pr cwt.*
Do.	*2d*	89	0	–	0	0	
Do.	*3d*	73	0	–	0	0	
Flax undressed		40	0	–	60	6	*pr cwt.*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	42	6	–	50	0	*pr cwt.*
Pork	..	42	0	–	45	0	*pr cwt.*

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner;—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton

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The Culture of Mangel Wurzel in Cumberland.

Sir—The most inattentive observer must be fully convinced that every new plant encounters great difficulties on its first introduction. The ignorance of its friends, the prejudice, and sometimes the virulence of its enemies, and the negligence of the indifferent, prevent that knowledge, care and attention from being bestowed upon it, which old established plants have so long secured. In Cumberland, this year, Mangel Wurzel has laboured under all these disadvantages; and a fatal blow was, at the same time, aimed at its very existence, by an agriculturist of considerable eminence, who adduced as his authority names long and justly endeared to farmers. How then has it stood this fiery ordeal! The number of those who cultivated it was twenty and upwards, in a district of more than fifty miles long, distinguished by different soils and climates. It is unnecessary to enumerate the names of all its cultivators. The general result of my inquiries is only given in the following statement—Mr. Sutton Scotby, near Carlisle, and Mr. Salkeld, near Workington, have been the most successful and judicious cultivators of this plant. The season adopted by both for sowing it, was from the 17th to the 23d or 24th of April; soil a fine deep loam, in a very high state of culture, and free from weeds. It was deposited from the hand in ruts, made for that purpose by some, and dibbled by others. The last is the most judicious method, since it enables the farmer to deposite it at nearly the best intervals. All crops, either sown on strong adhesive soils, though at a proper season, or on the best soils at an improper one, were very defective. Our President (Mr. Curwen's) crop suffered from the first cause—almost all the other crops from the last. Light soils are by no means calculated for its culture. The season for sowing it, *cæteris paribus*, is from the beginning to the 20th or 25th April. It should never be sown later than the 10th of May, and never succeeds so well when transplanted.—Transplanting is necessary for supplying those parts of the crop which have failed, but should never be adopted as the best system of cultivating it. Manure in a putrescent, not fresh state, raises the heaviest crops.—Much care is necessary in procuring good seed, since Messrs. Barnes, in the Holm, declared they would not cultivate the variety they sowed last year, on account of the large lateral shoots with which it abounded, and which made it extremely difficult to be uprooted. This was not the case with the seed sent me by the Editor of the Farmer's Journal; and it should induce all those who wish to cultivate it, to apply to the original cultivator of this plant, Sir Mordaunt Martyn, who intends supplying all that apply for seed at moderate prices. The distance at which it should be at last suffered to stand, is 14 or 16 inches on deep fertile soils, which are best appropriated to its culture. A sufficient trial has not yet been made to determine whether its progress is retarded by cutting off the leaves or not. The leaves have frequently been cut without any apparent injury. In one or two instances, the leaves swelled the cattle to which they were given; but the generality owned they had never observed any injury when given cautiously; and it is universally admitted that swine are remarkably fond of them. Mr. Sutton considers that the tops of Mangel Wurzel increased his quantity of milk more than clover, and that they were surpassed only by tares. Mr. Manson, near Workington, values tares more than clover for increasing milk. On the other hand, some, of very considerable experience, are of opinion clover is the best, when in a succulent state, for milk, of all cultivated plants. The great cause of this discrepancy of opinion must originate from want of due attention to the period of the growth of the different plants. The lateral leaves only of Mangel Wurzel are to be used. In the mode of clearing this plant, the same methods are requisite which are used in the culture of turnip, and which are so well understood in almost every district in Scotland. The proper time for taking it up, is before the frosts commence, and it answers well when stacked like potatoes.

The properest season for using it is from April to the beginning of June, if necessary, since it suffers no injury from being kept.—The cattle which have been fed with the roots of this plant, with due care, have given no cause for alarm. Some judicious farmers are convinced the quantity of cream is increased by root of scarcity. The generality of cultivators, four-fifths, at least, are satisfied this root is preferred by cattle to turnips. There are none whose cattle have been injured, except those mentioned by the gentleman already alluded to; and there is not even the shadow of doubt resting on the minds of the cultivators of this plant, that, unless given in improper quantities, it is not calculated to produce any bad effects. It is evidently not designed to supersede the use of turnips on indifferent soils; and the cultivator who relies upon it on such soils, will be wretchedly disappointed. No plant yet tried in this county has raised so large a crop as it has done on soils adapted to it—fifty tons per acre: and it stands unrivalled for its utility at a period of scarcity in April, May, or even June, when the wants of the farmer are the most urgent, and the means of supply almost invariably scanty. It may justly be considered the most *invaluable link* in the chain of the system of soiling.

F. SIBSON.

ON DRAINING.

(From the Irish Farmers' Journal.)

SIR—The subject of my last letter, so flatteringly received, I am happy to perceive had been anticipated by your correspondent from Gaybrook, in your 17th number. His interesting communication upon Hay-making, furnishes an additional stimulus both to the credulous and sceptical farmer to come and see. In a case so remarkable as that which he states, (and no doubt most correctly,) nothing but occular demonstration could fully satisfy—the expedition of his method having surpassed that of the most expert Middlesex hay-farmers in the most favourable seasons.

To have mown upon Monday, shaken out upon Tuesday, and carried safely to the rick on Wednesday, is a process so particularly rapid as to excite much interest and inquiry—and perhaps Mr. Manly will have the goodness to favour the public with a more minute detail of his method, both as to the mode and expense of shaking out, how often turned whether put into windrows or cocks, and whether, in so very summary a mode, some risk is not encountered from overheating; whether the colour is preserved, and what may be the proper dimensions of the ricks?

In the extensive hay yard of Earl of Farnham, whose practice I detailed in my last letter, the entire hay of both years was free from any stain by over-heating, and retained its original colour and fragrance.

The manner of Draining which I observed upon the Earl of Farnham's demesne, and on that of the Bishop of Kilmore, I shall offer to your notice, premising that it is chiefly adapted to clay soils—In a stony sub-soil it cannot be adopted; but if a vein of stone merely cross the line of drains occasionally, the interruption will be only in proportion to the extent of the vein, which must be managed, for so much, in the common way.

The line of drain being marked out, the operation commences by the plough, which at two bouts in the same direction, leaves a furrow of twelve inches deep—to this depth six or eight inches are added by the spade and shovel—and thus a surface drain of at least eighteen inches deep, and twelve wide, is formed—At the bottom, and in the centre of this, the draining tools are to be applied.

The first is a long, straight, and narrow spade, eighteen inches by three, steeled and sharpened at the lower edge, and thickened gradually till it meets the handle, which is longer than that of the common spade—at this point of junction a rest for the foot is set on, and with this tool a small drain is formed with great facility in the bottom of the first, about fifteen inches deep and five inches wide which is cleared out by another tool resembling a large gouge, but of a hooked form; by which the bottom of this narrow cut is perfectly freed from whatever may have fallen into it by the operation of the spade—and thus a drain of at least thirty-three inches deep is produced, which depth may be varied according to circumstances. The surface soil being moderately porous, the drain may be sunk accordingly: but where very retentive of water, the channel by which it is to escape must be kept within reach.

This narrow channel, formed in every respect as above described, is to be filled with brush-wood, prunings of plantations, or common furze, which is considered the best material, choosing tolerably straight stems, from two to three inches in circumference, and observing that each furze bush be made to overlap that which has been previously put in, and to be pressed and forced down by the foot, so as to form a regular compact and firm filling, till it shall have risen a little above the level of the set-off. The bottom spit of the clay is then to be thrown on it, and well tramped down, by which a regular arch is formed, springing from the set-off at each side of the bottom of the wider drain, and supported by the furze thus firmly pressed into the narrow one, which filling, will not decay for many years; and even then, will leave behind it an arch of clay, likely to continue uninjured, from its depth below the surface, and from the very narrow space which it commands.

The clay having been tramped in five or six inches thick, the remainder is to be shovelled back into the drain in the usual way, by which the whole is completed. This, exclusive of the first opening by the plough, is executed by task-work, from 2½d. to 3d. per perch of twenty-one feet.

This mode of draining has been introduced into the county of Cavan, by Mr. Webb, land-steward to Lord Farnham, who in the last year completed on his Lordship's demesne 2,600 perches of drains, with the best effect, making them in general at eight yards interval, (which may be diminished according to the retention of the surface,) and conducting them into the main drains, a measure necessary in flat ground, in order to supply a sufficient force of water to keep the drain open—but where there is extent enough, and a proper fall, he recommends that each drain should carry its own water, lest the main drain should burst from having too many others conducted into it. He conceives that for the most part 200 perches of drains would be sufficient for an Irish acre.

Upon the Bishop of Kilmore's demesne, where, under the instruction of Mr. Webb, this system has been adopted, 3,650 perches of drains have been executed between the 14th December, 1811, and 3d July, 1813, as appears from the entries in the steward's book, by which between twenty and thirty acres have been effectually drained, at the moderate cost of £45 12s. 6d. His Lordship has contrived to make the ditches which enclose his fields the main drains into which all the others are conducted; by which means each drain, as Mr. Webb recommends, is made to carry its own water.

These drains are directed across the hills with a very gentle fall, which obviates the risk of their being choaked up or damaged by too rapid a gush of water—Particular attention is also paid to remove any impediment from the mouth of each drain which might interrupt its regular discharge; and to facilitate this the first two or three feet of each drain is made with stones.

Such has been the good effect of this manner of draining, that upon a field of 12 acres originally one of the wettest in the demesne of Kilmore, the Bishop has been this year enabled to have a crop of turnips, which Mr. Curwen (no mean authority) declared to be the best he had seen in his tour through Ireland. According to an average accurately made, from the weights of eight equal measurements in different parts of the field, the crop of bulbs was at the rate of 45 tons 17 cwt. per Irish acre; that of tops 19 tons 5 cwt.—in all 65 tons 2 cwt. per acre—a return far exceeding the common average of turnip crops; and falling very little short of what the best cultivated parts of England can produce—25 tons of bulbs per acre are there considered a good crop—30 tons a remarkably good one—That at Kilmore would be about 28 tons to the English acre; it consisted of white and red Norfolk. The foregoing average was struck from equal measurements of both—the weight of the red (a circumstance worthy of notice) exceeded that of the white, *ceteris paribus*, at the rate of about five ton ten cwt. per acre; and had the average been made upon the red only, the produce would appear per Irish acre of bulbs 49 tons—which, per English acre, would be 30 tons 4 cwt. 8st.—and per Scotch acre 38 tons 8 cwt. 6st.—Obviously a superior crop, upon a soil where turnips could not have been grown, but for the effectual, though unexpensive, draining above described.

Lest, Sir, I should be considered to encroach too far upon your interesting and useful columns, I shall reserve the conclusion of this subject for another letter, and remain Sir, your most obedient servant, R.

ON THE CULTURE OF MANGEL WURZEL.

(From Evans and Ruffy's Farmers' Journal.)

Sir—I took a farming ride last June into some of the western counties, and found much land in a very wet state, and sown on a flat surface with the water standing in the furrows. One piece, about thirty acres, had been sown with wheat on a flat surface, but being so near the water it was all destroyed: I believe this crop might have been saved on high ridge work. The ground was ploughed about the middle of May, and sown with barley on the same plan as the wheat: I saw the water in the furrows so near the surface, that the barley must shoot its roots into it. The farmer must, of course, anticipate a similar fate to the preceding crop.

I observed several pieces of mangel wurzel, but they appeared most of them to be transplanted. One gentleman informed me that he had lost a great number of his plants, and could assign no reason for it: he wished me to look at them. I was shown into a high walled-in garden, where he raised them in beds, then transplanted them into the field:—if I could inform him the reason of his loss he should feel himself obliged. I stated that the land I tilled for a crop was sown as early in May as the land could be made ready to receive the seed, and when the plants were ready for hoeing they were hoed the same as turnips. The reason he lost his plants was evident to me. All plants raised for transplanting should be sown about the first week in April,* and drawn or hoed out to two or three inches apart, and not removed till the plants were very strong; if as thick as one's little finger the better: those on his beds should be thinned out and left till the plants were strong, or he would lose fifty out of a hundred, and those that remained yet alive would come to but little. They appeared to me to be only between three or four weeks old from the seed; he had a number of hands at work upon them, but he put a stop to their further proceeding, and said he would wait till the plants were stronger. I stated that I generally planted about 100,000 plants every year, but I did not commence that work till my clover hay was removed, when the ground was immediately ploughed and planted with strong plants, and I seldom lost a plant, except in a very unkind season: a few may fall from careless planting. This crop I consider of much more value than the second crop of clover; the rows being planted a proper width for the plough and scarifier to work, the land is made in a fine state, and the crop removed in November time enough for a crop of wheat. I find, Sir, that some of your correspondents complain of their transplanted roots failing; perhaps it may be from a similar cause to that I have stated, planted too young; I have lost some thousands before I discovered the cause. The objectors against the cultivation of this root seem now reduced to a very small number, and of those few, could their reason be known, it would prove but a frivolous one. I know one man who sowed ten acres and obtained a good plant, but they were suffered to be over-run with weeds, and then ploughed up. Perhaps your Lichfield correspondent, in No. 900, signing an old Subscriber, may have as strong reasons against them as this gentlemen may be supposed to have, but he will not deign to give us any. I must think he ought to have had a little more candour than to state, that the writers in its favour wrote from interested views; but a little excuse is to be found for him, as it is more than probable that he judged others from his own feeling. I agree with him that the writers in your Journal should give their proper names, as it would add additional weight to their communications, but before he would be justified in calling for the name of others, he should have given his own.—I am, Sir, your's respectfully,

THOMAS HEROD.

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* Those plants raised in April are to be transplanted; those sown in May to be left for a crop where sown; the former, if not removed, will run to seed, but their transplanting prevents it. Swede turnips may be grown to advantage on the same system—the expenses similar to turnips twice hoed.

To the Editor of the North West Magazine.

Sir,

In a former Magazine you gave some hints relative to the disease among black cattle called the Muir-Ill. I cannot, at present, find that paper, nor charge my memory with the contents, but it strikes me I would be culpable if I did not make public what has come to my knowledge a short time past, and to my cost.

I had a fine 3-year old bullock which I was persuaded to send to a person who had grass going to loss in a well sheltered, woody farm, and where I was assured he might continue thriving so long as the winter kept open. He had not been there many days until the owner of the farm came to tell me he had got the Muir-Ill, and required from me an ounce of saltpetre, saying, I need not be uneasy, as he never knew any to die with him of it. The next morning his news was different, and he required a pound of butter and a pound of salt, which, he said, could not fail. I shortly after went myself and found the animal alive, but that the knife was then his only remedy, and procured a butcher. This being the first I had seen in this disease, I was determined to inspect the interior of the animal. From his throat there came about two quarts of black bloody water, surely not sufficient to keep the heart in motion. On opening the body, I found the heart, arteries, and veins completely exhausted of blood. About the valves of the heart there was a little white froth, arising I suppose, from exertion while exhausting in the lungs: at the mouth of the pipes, some more froth, I suppose from the samecause, but in no other respect was there any unnatural appearance in either. The flesh appeared rather fairer than it probably would have been, if bled at once, and the difference might proceed from the blood coming away at different times, as the butchers bleed veal calves frequently to make their flesh fair. He was in fine order as a store bullock, but his fat had the appearance of wasting. His liver was rather blacker than it ought to have been, and the gall bag about half filled with mixed blood and water, of a black colour. The kidneys were of the natural size and colour, and the fat adhering to them in the usual manner. The bladder was about half full, rather of a large size, and its contents were of that bloody water, not in looks to be distinguished from that which issued from the neck when bled. The spleen on the large bag shewed more alteration than any other of the interior parts; it was much enlarged, and so soft and tender that it came off in pieces in my hand, but no offensive smell.—When the carcass was hung up it looked as well as if killed in a healthy state, nor could the best judge have made any objection, if exposed in a public market. I have since regretted much that I did not procure a surgeon to examine more minutely—something might have been discovered by a scientific eye that escaped common observation. Here the heart, arteries, and veins were completely exhausted by the disease. Nothing can be calculated upon what issued from the neck—through the bladder the entire blood took its course. It must, by some forced conduit, have got into the urinary passages, but how or by what means, I was at a loss to find out.—On the bags being opened, the contents had been too much changed to discover the grasses therein—indeed, the animal had been confined to the house for three days, undergoing all the spells and sorcery of ignorance, before I was made acquainted with its situation; of course the grasses that produced the disease were all dissolved from their natural appearance before they came under my view, Now, Sir, I should be glad to know what vegetable or other substance it is, that can, in a few days, for it could not be more than eight, change the course of nature so far as to turn the blood from its natural course, and discharge the entire of it from the body through the urinary ducts. If this is once ascertained, the cure will follow of course.

The following remarks have been made to me, but I do not vouch for their truth.—A cow reared upon the farm is not subject to the disease—a strange cow rarely misses it—no instance of their taking it a second time. A farmer states to me, that his farm, during the lifetime of his father, and for years after, was not subject to the disease—now very much so: this he imputes to his father keeping a large stock of geese, and that he has not done so latterly. This opinion I cannot accede to, for the woody part is most frequented by the cattle, and by his own account, the geese were sent to the marshes and and mountain; but I rather think his father kept up his stock with those raised on the farm, and that the son has not followed that example. The supposed cures are countless, exclusive of miracles wrought by wise men and women. One cure only I shall mention in addition to the two former, viz.—a quantity of potters' clay, either yellow or blue mixed with water, and about two quarts poured down their throat.

A cow surely may be accounted among the most useful of all domestic animals, and I trust as soon as your Agricultural Seminary is established, that attention will be paid by a professional person appointed for that purpose, and the cow rescued out of the hands of ignorance and superstition. I shall relate here what took place in my presence which you may insert, if the foregoing is not already spun out to too great a length. In the month of April last, a poor man's cow got so weak as not to be able to rise; he sent for a wise man, who, on inspection, pronounced her to be elf shot. I asked him to shew me the proof that she was so; he placed my hand on her back to feel the great separation between two of the joints, from thence in a direct line down to her belly, where he said he found a large hole where the shot had taken place—this was the place from whence the milk veins issue—and he required one shilling for the cure. I then desired him to feel other cows, particularly those giving milk, and shewed, to his disappointment, that the separation of the joints on the back, proceeded from poverty, occasioned by the bad fodder, and that the better the milk cow the larger the orifice, from whence the milk veins issue, and directed the owner to feed with more substantial food, as the cow was near her calving.—The event justified my observation—the cow grew stronger by good feeding, and brought forth her calf and did well. Your's G.

The other communication by the above writer, we fear would give offence, and perhaps with justice might be considered ungracious in a work patronized by the North West Society, of which the proprietors alluded to have been zealous supporters. The manuscript is safe.

The article recommending to the attention of the North West Society, the formation of Joint Stock Companies connected with those in England, for Railways, Manufactures, &c. is important—but is unavoidably postponed.

Premiums of the Londonderry Branch of the N. W. of Ireland Society.

The Ploughing Match will be held on Monday, the 28th day of February next, at Mr. Buchanan's farm, at Springtown—farmers only entitled to any pecuniary prize.

FIRST CLASS.	
To the farmer occupying more than 25 acres of arable land in his or her farm or farms, who, by himself, or his or her son or servant, (which servant must have been in his or her service from last quarter day) shall plough half-a-rood of ground in the best manner, with one pair of horses, mules, or oxen, in reins, (all his or her property) within 2½ hours, — —	£3
To the second do. — —	2
To the third do. — —	1
SECOND CLASS.	
To the farmer occupying 25 acres or less of arable land, &c. (as above) —	£2
To the second do. — —	1

Competitors in the second Class, if the ploughing be adjudged superior to that of the first Class, shall be entitled to the premiums of the first Class as well as in their own Class; but no competitor in the first Class entitled to a premium in the second Class. The object of this resolution is to secure to the smaller farmers the prizes in their own Class at all events, and to encourage them by giving them a chance of double premiums, should they have merit and skill to obtain them

Should there be no competitors in the second Class, the premiums appropriated to that Class shall be added to those of the first Class, as the President and Committee appoint.

Ploughmen gaining premiums, and those of decided merit, shall be entitled to certificates from the President and Committee, stating the degree of merit adjudged to each.

Competitors shall enter their names with the Secretary, on or before Wednesday, the 23d day of February next, their ploughs to be in the field appointed, by ten o'clock in the morning, and ready to start at eleven.

The furrow to be 4 inches deep by 7 wide.

No member can have his name entered until his annual subscription be paid—which annual subscription becomes due, and should be paid fourteen days previous to the autumnal Meeting, in each year, when the Treasurer of the Branch audits his accounts and transmits them to the Treasurer of the Parent Society.

The President, Vice-Presidents, Committee and Treasurer, will receive subscriptions.

Mr. R. M'Crea, Grange,
Mr. C. Tate, of Kilfenan, and } Judges.
Mr. James Patchell.

The Judges are to adjudge to each lot, in in numerical order, as to its degree of merit.—No person whatever to communicate with them after they enter on their duty.

The person holding the plough shall not receive the slightest aid from any person, master, friend, or servant, who are prohibited from speaking to the ploughman after he has begun his work.

Messrs. M. Loyd, Mackey, Doherty, and Buchanan, are appointed a Committee, and requested to lay off the field, who will be supplied with numbered poles and marks, to be placed at both ends of the divisions *only*, unless a rise in the ground prevents the ploughman seeing his opposite pole or mark, when the above Committee may place intermediate poles or marks—but the ploughman or his master, friends, or servants, may not add or alter any marks whatever.

The above-named gentlemen and all other members of the Society are requested to assist the President and Committee in preserving order and regularity in the field.

The amount of the premiums to be expended in farming implements by the successful competitors.

TURNIPS.

FIRST CLASS.

To the farmer occupying 20 acres of arable land and upwards, who shall grow the greatest quantity and best crop, not less than one acre,	£2	0
To the second do. half an acre	1	10
To the third do. do. —	1	0

SECOND CLASS.

To the farmer occupying less than 20 acres of arable land, who shall grow not less than one rood, for the best crop, — — —	1	5
To the second do. do. —	1	0
To the third do. not less than ½ rood,	0	15
* To the fourth do. do. —	0	10

CLOVER OR CLOVER & GRASS SEED.

FIRST CLASS.

To the farmer occupying 20 acres of arable land and upwards, who shall grow the greatest quantity and best crop, not less than two acres, sown in 1825, — —	£2	0
To the second do. do. —	1	10
To the third do. do. —	0	15

SECOND CLASS.

To the farmer occupying 15 acres of arable land or less, who shall grow the greatest quantity and best crop, not less than one acre, sown in 1825,	1	5
* To the second do. do. —	0	10

Should there be no competitors in the second Class, the premiums to be appropriated as the President and Committee appoint.—Competitors to give notice to the Secretary, on or before the first Wednesday in March, 1826, that the crops may be viewed before cut, and the premiums awarded.

N. B. Competitors for premiums for Clover or Clover with Grass Seed, sown in 1824, to give notice to the Secretary on or before the first Wednesday in March next, that the crops may be viewed before cut, and the premiums granted last year awarded.

CATTLE.

To the owner of the best Cow, the property of a farmer and member of this Branch for three months previous, — —	£1	5
To the owner of the second do.	1	0
To the owner of the best Heifer, the property of a farmer and member of this Branch for three mouths previous, — —	1	0
To the second do. —	0	15
To the owner of the best Boar, under the foregoing restrictions,	1	0
To the owner of the best breeding Sow, do. — —	1	5
To the owner of second do. do.	0	15

All Cattle to be entered with the Secretary eight days before the General Show of the N. W. of Ireland Society, in 1825.

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* Competitors in the second Class, if they cultivate the quantity, may claim the premiums in the first Class as well as in their own—none other than farmers are entitled to compete for these premiums.

BUTTER AND CHEESE.

To the farmer who makes and produces the best firkin of butter,	£1 5
To the farmer who makes and produces the second do. —	0 15
To the farmer who makes and produces the third do. —	0 10

Competitors to give notice to the Secretary eight days before the General Show of the N. W. of Ireland Society, in 1825; and the butter is to be exhibited at the weigh-house, Londonderry, the day after the General Show, subject to the regulations and judgment of the judges, to be appointed by the Society.

All premiums may be withheld for want of merit,

THOMAS RAMSAY,
Secretary & Treasurer.

The members of the Londonderry Branch of the N. W. of Ireland Society are requested to attend to the following Resolution of the Parent Society, at a General Meeting held on the 10th of April, 1823:—

"That when Premiums are offered to Members of the "N. W. of Ireland Society or its Branches, none shall "be suffered to compete for such Premiums, except "those who have been actual Members for six months "preceding the day of competition."

SALTED SLUGS.

Sir—Seeing in your valuable Journal of last week, an intelligent correspondent, Mr. Taylor, jun, has recommended Salt for killing Slugs, I beg permission to state, that on the smallest scale possible I have since been induced to test the experiment, namely, by collecting from my garden about half a score of these puny but voracious reptiles, which I put on to a sheet of paper, and sprinkled over them a few particles of common salt, when a galloping consumption instantly seized them; a slimy mucous issued from orifices in their tails that seemed to melt them, and all died in a few minutes greatly tortured, and wasted down to mere ghostly exuviæ.

That all the hungry enemies of our country's agriculture could be thus cheaply, pickled, is the hearty wish of, Sir, your obedient servant,

W. FAUX.

Last day of the Flax Premiums for this Season—Wednesday, 26th Jan. 1825.

First Premium of £2 10s. to Patrick Bradley, parish of All-Saints, scutched at Montglass mill.—Second do. of £2 to John Montgomery, Parish of Rye, scutched at Rye mill.—Third do. of £1 10s. to Thomas Gibson, Parish of Cumber, scutched at Dungorcan mill.—Fourth do. of 1*l.* to Rev. H. Carson, Parish of Glendermot, scutched at Ardlough mill.—Fifth do. of 1*l.* to Samuel Hanna, Parish of Killea, scutched at Laganduff mill.

The flax exhibited this day surpassed any in point of cleaning hitherto brought to this market—the last four premiums were obliged to be drawn by lot, the Judges being unable to decide which had most merit.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt*
Oats	...	0	9½	–	0	11	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3	–	0	5	*pr lb.*
Mutton	...	0	3	–	0	5	
Veal	...	0	6	–	0	10	
Butter	...	0	8	–	0	10	*pr18oz*
Firkin Butter, 1st		95	0	–	0	0	*pr cwt.*
Do. 2d		89	0	–	0	0	
Do. 3d		73	0	–	0	0	
Flax undressed		40	0	–	60	6	*pr cwt.*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	50	0	–	60	0	*pr cwt.*
Pork	..	42	0	–	45	0	*pr cwt.*

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton,
by whom Letter-press and Copperplate Printing and
Binding are neatly and expeditiously executed, on
reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. III.—NO. 12. WEDNESDAY, 9th FEBRUARY, 1825. Price 2d

On projects of Improvement.

From the peculiar circumstances of Ireland, rail-roads are likely to be valuable in a very eminent degree. The soil is rich and fertile, the sources of prosperity are numerous, yet poverty and distress prevail extensively; and the horrors of famine are frequently felt in districts rarely equalled in natural resources. The immediate occasion of this is the want of industry properly directed among the numerous population. Manufactures and commerce are either wanting, or are too sparingly established; and agriculture languishes.—To remove these evils, nothing perhaps would contribute more effectually than the establishment of easy, cheap, and rapid means of internal communication. Let the country be intersected with railways, passing through the most important districts, and terminating in the principal sea-ports; and from these leading lines, let branches be extended to neighbouring towns, mines, and other places of importance; and a new impulse will be communicated to the energies of the nation. Farmers will thus find a ready market for their produce, and will thus have the most powerful motive for increased activity and exertion, in raising articles, which can thus be disposed of to advantage. They will also be supplied on moderate terms, with whatever may be necessary for the culture of their grounds, or the erection of buildings, or for the comfort of themselves and their families; and having found the means of procuring these articles more abundantly than before, they will gradually acquire what is unfortunately too little felt in Ireland—a wish to have houses, food, and clothing, of a comfortable kind.

In many respects, Ireland presents great advantages for manufactures. These would be materially facilitated by improved internal communication. Such facilities seem likely, indeed, to present the strongest inducements to British capitalists to form establishments in Ireland; it is almost certain that they could there manufacture their goods, by means of proper machinery, much more cheaply than in Britain.

We have thus far confined our views to the effects which might be expected to result from the establishment of railways in Ireland itself. There are other circumstances, however, which add greatly to the advantages already pointed out. Steam vessels are beginning to be more generally established. By means of such vessels plying between the principal sea-ports in Britain and Ireland, and by the railways on both sides, the manufactures and produce of Ireland could be poured over Britain with despatch and certainty, and to the mutual advantage of both countries. The excellence of Irish provisions, of different kinds, is well known; and by the proposed means, they might be conveyed to England in the best condition. Epping butter now sells in London at two shillings a pound; while in Ireland, butter of equal quality can be had at half the price, and could be conveyed to England fresh and good. It is perfectly feasible, indeed, that butter might be churned in the centre of Ireland one day, and be the next, on the tables of the rich or the poor, in Manchester or Birmingham; and eggs, poultry, and fleshmeat, might be conveyed with equal despatch.*

To the Editor of the North West Magazine.

MR. EDITOR,

Now that Ireland has become an integral part of the British empire, millions of English capital are ready to be transferred to it, wherever fair prospects of profitable investment can be held out to our wealthy neighbours. There is no country in the world possessing a greater share of the elements of wealth than the district under the protection of the North West Society, yet, in no country have these natural advantages been more neglected—we have, within our district, those materials which form the basis of the commercial wealth of England, yet from some unaccountable cause, we have scarcely attempted to make use of any of them. We have a superabundance of physical power, and most of those moral qualities which contribute so much to the success of any useful undertaking; still is the bulk of our population struggling to obtain a bare subsistence. All kinds of people are anxious to improve their condition, and we enjoy equal natural advantages with those who have, from as low beginnings, risen to the greatest known prosperity—there must still be something wanting to enable us to turn to account what nature has bestowed on us with so liberal a hand.—In the present age of science few branches of manufacture can be carried on to advantage on a limited scale—it, therefore, appears to me that our improvement is retarded chiefly by the want of a sufficient quantum of capital, under the controul of skilful and intelligent men, who by acting in concert, could bring into operation simultaneously, the different branches of those trades that are at present diffusing such general wealth throughout Great Britain.

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* The above excellent observations are extracted from an extremely clever and amusing work, of which the first number has appeared, *The Belfast Magazine*. If the future numbers exhibit equal ability, taste, and moderation, the work cannot fail to be creditable to the North of Ireland, and to obtain general support among the moderate and respectable part of the community.

Our rural population is the densest in the known world; neither is it deficient in integrity, activity, industry, or the other qualifications that would promote the successful developement of our resources: the country abounds in unoccupied water power, situated contiguously to our sea-ports; coals, iron, lead, copper, and other riches of the mineral kingdom, are in as great abundance in the North West District as in the most favored spots of Great Britain, yet, why have all these remained so long neglected, or why have the few attempts that have been made to bring them into action proved abortive? For this reason alone, that no individual among us had within himself sufficient means to carry on the various branches of any one of these trades, which can never flourish without a certain degree of co-operation and contiguity in all its parts. From the port of Derry goods can be sent with regularity and despatch to the markets of Liverpool and Glasgow, at a an expense not exceeding that of 25 miles land carriage, yet, is our trade limited, to the export of a small quantity of agricultural produce, and our linen trade that is already cramped, may possibly, ere long, be totally annihilated by the improvements in English and Scotch machinery.

The leading members of your Society might now induce the English capitalists to invest their money in spinning mills, for cotton, wool, or flax, in working the mines, or in improving our internal communication, by means of railways, and all, or any of these undertakings—cannot fail to prove sources of profit to those who engage in them, and must benefit every part of the community.

Our southern brethern have got the start of us; they are already in communication with the Irish Joint Stock Companies, in London and unless we act with promptitude and energy, we shall lose an opportunity of advancing the different interests of the country which may never again occur. I have already occupied too much of your time to enter more into detail, but if you think the foregoing observations worth your notice it will gratify your obedient servant to insert them. R. P. H.

THE AGRICULTURIST'S REMEMBRANCER *for* FEBRUARY.

Towards the latter end of this month, should the drying north east winds prevail, the process of paring and preparatory to burning, should be commenced—The expediency of this husbandry, on old grass lands, wastes, heaths, moors, fens, mountains, and bogs previously drained, is now proved beyond all possibility of question—due preparation should, therefore, be made for it.—This too is a proper season for bringing the borders of fields into proper order—The quantity of land generally lost in this way is great, occupied by earth thrown out of ditches, and the turnings of the ploughs and harrows at the head-lands—the roots, if any, should be grubbed up, and the strips prepared for cultivation during the spring.

Water furrowing after ploughing, should be carefully attended to, the descents and variations in the surface are easily ascertained, and by a little management the water may be effectually prevented from lodging in the furrows—stagnant water materially injures crops and should therefore be drawn off at the earliest period—Manuring should go forward the moment the snow is off the ground, particularly of the lighter sorts.—Green Wheats may be top-dressed. This is the proper season for sowing spring vetches; the first dry time this month should be chosen for the purpose—We strongly recommend this crop to the attention of farmers—it returns, if sowed at a proper time, and fairly cultivated, a greater produce on a given surface, than any other species of green food, and affords superior nourishment to stock—Instead of exhausting, it rather benefits the land, and is, in every point of view, a resource of the most certain and beneficial nature.

Much attention should now be paid to watered meadows: if the water be suffered to flow over the meadow for the space of many days without intermission, a white scum is generated, which is found prejudicial to grass; and if the water be then taken off, and exposed in its wet state, to a severe frosty night, a great part of the tender grass will be cut off—About the middle of this month, the floater should begin to use the water rather more sparingly than in autumn or winter—Potato land should now be prepared for the main crop—we hope to see the drill husbandry, in this branch of farming, universally adopted; and if this be accompanied with a sufficiency of manure, the farmer need be under no apprehension as to the return; but he should never apply land to this cultivation, unless he has an abundance of dung; his crops will otherwise fail, and the land be greatly exhausted. The lime-kiln should be kept burning all this month.—Marling may also go on profitably this month. In our next we shall give the most approved methods of making composts; a matter of essential service to the farmer, and in which many errors are committed.

We must again recommend that the greatest attention be paid to the farm-yard, and all the buildings where cattle are housed: and the farmer should see that every place be kept constantly littered, and the beasts clean—Of this article there never should be the least want in the stalls or yards, for the only way of raising large quantities of dung, is to make use of abundance of litter.

ON PLANTING POTATOES.

(From the Irish Farmers' Journal.)

Sir—When I last had the pleasure of addressing you relative to the raising of potatoes from the *top apples*, I promised to send to your office a specimen of some I had thus reared. I now send them along with this letter, hoping that your agricultural friends will, on inspection of them, admit that nothing could be more beneficial to the country than that a similar practice should generally prevail, especially when they recollect that the process is easy and the result satisfactory. I wish now, Sir, to make a few observations on the general cultivation of the potato, and first to notice the practice of spreading the manure under the cuts in early planting. The reason which I would assign in favor of this method, is the protection thereby afforded against spring frosts, for as such crops are usually planted on long manure, there is a defence afforded to them during the time of germination sufficiently strong to repel frost of more than ordinary strength or continuance, which would be almost certainly fatal to the root if unprotected by the manure. I am also of opinion that the growth is hastened by this mode, because, in addition to the natural inclination of root-buds to push towards the light, the succulent shoots of the potato will, by another law of vegetation, be incited towards the nourishing substance placed above them—and as the particles of the manure are not so cohesive as the soil to which it is applied, so there will be a looser covering immediately about the roots, the good effects of which will readily be acknowledged by the practical agriculturist. When potatoes are planted on ley ground, as one of the advantages which they afford is the great degree to which they pulverize the soil, we may suppose that this will take place more when the manure is upppermost, as they are in immediate contact with the soil previously unstirred, and the bulbs will have more effect in dividing it—the hardness of the ground will not avail in hindering them from swelling, provided they have sufficient nourishment—the shape may be altered, but their growth will not be checked.

When early potatoes are to be planted in broken ground, no better mode can be used than ploughing, the same as is customary for a late crop, setting the cuts, placing the manure over them in the drills, but leaving every fifth drill unsown—those fifth drills should be ploughed as deep as possibly convenient with two horses, and the mould belonging to them shovelled upon the intervening ridges; the ridges will have four drills in each, and may be wed with far greater ease than if planted in the usual method with the spade; when the seed cannot be placed with equal regularity, a very slight second shovelling or dressing will be necessary, as most of your readers are aware that early potatoes do not require to be covered so deeply as late kinds, on account of the bulbs lying longer and flatter in the soil, and the stalks not being so long, and coming soon to maturity, are less exposed to injury from the weather.

To farmers whose land is infested with red-worm, I would suggest the propriety of using lime with potatoes on ley ground—being spread lightly, its caustic nature resolves into manure the grass and other vegetable matter beneath it, prevents the crop from being scabby or worm-eaten, and proves a powerful auxiliary to dung of any kind applied in the manner previously recommended. Some persons ascribe to lime or kiln ashes the quality of curing the curl; but that is a virtue which I think it does not possess, as I have observed the disease widely to exist where lime had been plentifully applied; but as its ultimate use to land depends on its intimate mixture with soil, there can be no more suitable time to use it than when ground is first broken, as it then must be subject to repeated stirrings throughout an entire rotation of crops. I have indeed remarked, that the potatoes were larger which were raised on it, and of a fine clear skin, though not more numerous in the ground, and this may be accounted for by considering the power which it possessed of attracting from water and the atmosphere the carbonic acid gas* which so especially contributes to the nourishment of plants. All those advantages will be united in reclaimed bog, as the various decayed vegetable substances composing such a soil, need particularly so active an agent to reduce them to complete putrefaction, and yet have almost always too great a depth to be soon worn out by its effects. The foregoing remarks, Sir, I submit to your consideration, solely relying on your kindness to give them a place—they have been put together without much exactness, except as to the accuracy of the statements, which have been the result of long and diligent observation.

I am, Sir, your obedient servant,

F. T. P.

HIGHLAND SOCIETY OF SCOTLAND.

The Anniversary General Meeting of this Society was held on Tuesday last. The Society met in their new Hall, Albyn Place, which has been finished and fitted up in a style and with a taste which do much credit to Mr. Playfair, the architect.

Soon after one o'clock, nearly 200 members were assembled, and among those, the Duke of Hamilton and Brandon; the Marquis of Tweeddale; the Earls of Mar and Aboyne; Lord Nairne; the Right Hon. Sir John Sinclair, Bart. the Right Hon. Charles Grant, M. P. and many others of extensive landed property, of high rank in the army, and of the first respectability in the law and in the commercial interest.

On the motion of the Duke of Hamilton, seconded by the Earl of Mar, the Marquis of Tweeddale, one of the Vice-Presidents in office, was unanimously called to the chair, when, after a ballot, as prescribed by the Society's charter, several gentlemen, were duly admitted members, their names ordered to be recorded, and public notification of their election given.

Mr. Macdonald, the Secretary, reported the proceedings of the Directors since the last general meeting in July. He submitted a general view of the rewards bestowed for promoting the Agricultural and Internal Improvement of Scotland: observing, that, since November, premiums had been awarded to a very considerable amount for Essays, containing information on various subjects—for improving waste lands—drainage—raising turnips and cultivated grasses—numerous local exhibitions of live stock in various districts, at which about 600 head of cattle had been brought in competition, besides horses and sheep—for medals to practical ploughmen—medals to cottagers for promoting attention to cleanliness and neatness—honorary premiums to proprietors in the Hebrides, and Orkney and Shetland, for planting—for improving the quality of kelp, and collecting and preparing marine plants for other useful purposes; in regard to all which, he observed that as the names of the successful competitors would be afterwards published, it was unnecessary to detain the meeting. In speaking of Kelp, the Secretary noticed with approbation the successful experiments of Mr. M'Crummen, of Leith, with the view of improving its quality on the east coast, where it had been previously rated at a comparatively low value. He also observed, that various local agricultural societies were now very judiciously devoting a portion of their funds to promote attention to veterinary surgery, by encouraging skilful Veterinary Surgeons to settle in their respective districts, or for defraying a part of the expense of sending farriers to Edinburgh, to attend the Lectures, given by Mr. Dick, under the Society's patronage.

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* Hornby's Treatise on the use of lime.

Mr. Ferguson, of Woodhill, submitted the report of the Committee for conducting the general show of live stock at Edinburgh, from which it appeared that the Committee were unanimous in recommending—

1. That the general show of stock, and exhibition of implements of husbandry, roots and seeds, should be continued, in 1825, in Edinburgh:

2. That it is expedient that the general exhibition of stock should also be continued in 1826, but to be held in Glasgow, and the same sum applied for this purpose as is given in Edinburgh, and that this should be immediately announced for the information of competitors.

The Duke of Hamilton said he felt convinced that the occasional transference of the general show of stock to Glasgow would be a judicious measure, as likely to excite a laudable spirit of emulation among the great Agriculturists in the east and west, and concluded a very appropriate address, by moving that the report of the committee be approved, which was unanimously agreed to, and the necessary sums accordingly voted.

Mr. Robertson Scott, of Benholme, from the Committee for deciding the premiums for the best specimens of Dunlop and of imitation double Gloucester cheese, made in Scotland, reported the very satisfactory result of this, the first competition. Fifty-two cheeses had been sent in, and from the affidavits of competitors, it appeared that some thousand stones of the same quality must have been made in the course of the year. By the advice of several practical judges, who had afforded the Committee the benefit of their assistance, the first premium for Dunlop was awarded to Mr. Sanderson, tenant in Blackcastle, Carnwath, Lanarkshire; and that for imitation double Gloucester, to Mr. James Bell, of Woodhouselees, Dumfries-shire; the judges being farther of opinion, that many of the specimens of the latter description of cheese were equal in quality and flavour to real Gloucester cheese.

Mr. Lockhart, of Greenston, observed, that the farm upon which the Dunlop cheese, which had obtained the premium, was made, was situated *in a high*, and by no means *a fertile* arable *district*, a circumstance which gave rise to a well founded anticipation, that, by improved management, much might be made of the dairy husbandry in many of our grazing districts.

A most favourable and interesting report was made by Mr. Munro Binning, from the Committee appointed to decide the premiums offered by the Society for promoting the curing of provisions in Scotland, after the manner practised in Ireland. He said, that, in a branch of industry, previously almost unknown in Scotland, a rapid advance had already been made in the quarter where the premiums were offered. These were limited, in the first place, to beef shipped at the port of Aberdeen, from cattle fed in the counties of Aberdeen, Kincardine, and Bamff; and in the course of the first year Mr. David Milne, the successful competitor, had cured and shipped above 90,000lbs. of beef, fit to keep on any foreign voyage. As superior pieces only were used, it was estimated that he must have cleared the market of 700 or 750 cattle, fed in the 3 counties. Mr. Binning congratulated the Society on this satisfactory result, and mentioned, that it was in the view of the Directors to transfer the premiums to some others of the principal ports—Greenock and Dundee for instance. The Meeting expressed their acknowledgements to Mr. Horne Elphinstone, Convener, and other members of the local Committee at Aberbeen, also to Captain Brebner, who was so obliging as to afford them the benefit of his skilful assistance, in a periodical inspection of the beef, as the process of curing proceeded.

Mr. Graham Dalyell, Convener of the Committee on Machinery, stated the proceedings since last General Meeting, and upon their report, approved by the Directors, the following sums were voted, viz.—1. To Mr. James Scott, superintendent at Queensferry, for a grate on a new construction, by the use of which a considerable portion of the smoke is consumed during the combustion of the fuel, a premium of five Sovereigns, and a sum not to exceed £10 as the price of the grate, which had been placed, for experiment in a chimney at the Society's house.—2. To James Aird and James Dunlop, ingenious operative mechanics at the coal works of Messrs. Taylor, of Ayr, for an improvement in the mode of attaching the axles and wheels to carriages for rail-roads, a model of which was submitted to the Society, seven Sovereigns.—3. To James Sellar, an operative blacksmith, in the parish of Botriphney, Bamffshire, for a cart wheel, with knave, spokes and felloes, entirely of malleable iron, with certain improvements, six pounds; a model of the wheels and axle to be transmitted to the Society in place of the large wheel which was sent for inspection.

Several other articles and their purpose were exhibited to the members; among which were the model of a machine for twisting straw ropes for corn stacks, by Mr. Ainslie, farmer at Begbie, Haddingtonshire; and the model of an improved gate, by Mr. Hunter, of Thurston.

The Earl of Mar presented to the meeting several models of improved corn stacks, and also a specimen of hornbeam hedges, which his Lordship had found to make a remarkably strong and durable fence. He at the same time laid on the table a paper of directions for preparing the soil and treating the hedge after it has been planted, until it attains maturity. The meeting expressed their acknowledgments to his Lordship for these farther instances of his continued attention to agriculture.

A very great number of requests for Premiums, from various districts of Scotland, were referred to the Directors, with instructions to attend to them in as far as the state of the Society's funds would admit.

The meeting then proceeded to the election of Presidents, Vice-Presidents, and Officers of the society, and to supply the vacancies in the Direction.

In the afternoon, a party of above ninety Noblemen and Gentlemen, Members of the Society, attended the anniversary dinner at the Waterloo Tavern, when Lord Tweeddale did the duties of the Chair, in a way which showed how perfectly his Lordship possessed all the requisites of Chairman of such a meeting. An eloquent speech also of the Right Hon. Charles Grant, in returning thanks on the health of the "Extraordinary Directors" being drank, delighted all present.

Premiums offered by the Kenaught Branch, for 1825,

At a General Meeting of the Kenaught Branch of the N. W. of Ireland Society, on Monday, the 17th January, 1825, consisting of 94 members.

PLOUGHING.

1st,	A Winnowing Machine, value	£4	10
2d,	A Scarifier, value —	3	5
3d,	A Break Harrow, value	2	5

BLACK CATTLE—BULLS.

For the best Bull of any breed, the property of, and in the possession of a farmer, from the 1st August, 1825, Implements, value ...	£2	0

COWS.

For the best Dairy Cow, conditions as aforesaid, Implements, value	1	10
For the best two-years old Heifer, as aforesaid, Implements, value	1	0
For the best year-old Heifer, as aforesaid, Implements, value ...	0	10

Inspection of Cattle to take place on Tuesday, the 4th of October.

HORSES.

For the best Stallion, calculated for husbandry and carriage use, which shall attend Newtown-Limavady market every second Monday from the 12th May till the 12th July, in money	£5	0

Inspection 12th July. All Stallions formerly shewn, are disqualified from competing this year.

BROOD MARES.

For the best Brood Mare with her foal, in the possession of a farmer, from the 1st of August, 1825, Implements, value	£2	0
For the second best do. Implements, value	1	0

YOUNG HORSES.

For the best two-years old Colt or Filly, as aforesaid, Implements, value	£1	0
For the best year-old do. do. Implements, value	1	0

Inspection same day as for Cattle.

SHEEP.

For the best farmer's Ram in this Barony, Implements, value	£1	10
For the second best do. Implements, value	1	0

EWES.

For the best farmer's Ewe in this Barony, Implements, value	£1	10
For the second best do. Implements, value	1	0

Inspection same day as for Cattle.

SWINE.

For the best Boar in the possession of a farmer, Implements, value	£1	0
For the best Breeding Sow in possession of a farmer, Implements, value	1	0

Inspection Tuesday, 4th October.

TURNIPS.

1st, For the best crop, not less than an an acre and a half, grown by a farmer in this Barony, Implements, value	£2	10
2d, For the best crop, not less than 5 roods, do. do. value	2	0
3d, For the best crop, not less than an acre, do. do. value	1	10
4th, For the best crop, not less than 3 roods, do. do. value	1	5
5th, For the best crop, not less than 1 rood, do. do. value	0	15

Inspection Saturday, 1st of October.

RED CLOVER.

For the best crop, not less than one acre, mixed or unmixed, Implements, value	£2	0
For the best crop, not less than half an acre, do.	1	0

Inspection 4th of June.

VETCHES.

For the best crop, not less than an acre, Implements, value	£1	5
For the best crop, not less than half an acre, do. do.	0	15

Inspection Saturday, 23d July.

HELIGOLAND BEANS.

For the best crop, not less than three roods, Implements, value	£1	5
For the best crop, not less than two do. do.	0	15

Inspection Saturday 23d July.

COTTAGES.

For neat, clean, white-washed Cottages, with well enclosed and well stocked gardens,

1st,	£1	0	0
2d,	0	17	6
3d,	0	12	6
4th,	0	10	0

Inspection Saturday, 23d July.

N. B. None but farmers entered for three months, as members of this Branch, can compete for any of the above Premiums, *except in the case of the Stallion and Cottages.*

☞ All claimants for Premiums, shall give notice of their various claims, in writing, ten days, at least, previous to the days of inspection.

⁂ All members of the Branch, and subscribers for the Magazine, are requested to pay their subscriptions and arrears.

HENRY H. TYLER,
Secretary.

To the Editor of the North West Magazine.

Mr. Editor—In the last number of the Magazine, I observe a letter on the disease in Cattle, called the Muir-Ill. A fact came before me some years ago, which may throw some light upon the subject. When residing in the county of Kerry, it happened, during a convivial meeting of the *Innisfallen Club*, that a gentleman introduced the subject.—His herdsman, he said, conceived he had ascertained the cause of the disorder, which was a large worm, of a beautiful green colour. He showed such a worm in a bottle to the company, it was 6 or 7 inches long, and about 1½ inches round; it was furnished with a hard spike at the lower extremity—and if such a creature could exist within the entrails of an ox, there is no question that he was capable of working his destruction.—How far the herdsman's idea was correct, I no not pretend to say. Perhaps some of your readers may be able to give farther information. D. T.

HORTICULTURAL SOCIETY IN BELFAST.

We have heard that it is in contemplation to form a Horticultural Society in Belfast, to include several of the northern counties.—Such Societies, wherever formed, have received the countenance of the principal nobility and gentry, and we cannot entertain a doubt, that a northern one would experience similar patronage. A taste for gardening deserves encouragement; and the rewards given by such a society, whilst they require no great exertion on the part of the subscribers, serve to stimulate the exertions of the working gardener. Another object has been also mentioned, that of establishing a library for working gardeners, which they may have the privilege of consulting. There is no art, the works illustrative of which are more expensive, than those on gardening; so much so that no person in a middle station of life, can afford to purchase them. It is favourable to exertion, that near Belfast there resides a gentleman who has tried many experiments in the naturalization of foreign plants, and who is of so high a character as a botanist, (should he engage in this measure,) as would contribute much to an intercourse with other societies, having the same object.—*Belfast Magazine.*

A friend informs us that by sowing peas on some worn out land polluted with weeds, particuarly with couch-grass, he had not only an excellent crop, but cleaned his ground effectually. The ground was in such condition that the succeeding crop of grain was much beyond his expectation. Should the gentleman alluded to find it convenient, we should be glad to hear from him on any topic connected with agriculture.—Ed.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt*
Oats	...	0	9½	–	0	11	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3	–	0	5	*pr lb.*
Mutton	...	0	3	–	0	5	
Veal	...	6	6	–	0	10	
Flax undressed		40	0	–	60	6	*pr cwt*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	50	0	–	60	0	*pr cwt.*
Pork	..	42	0	–	45	0	*pr cwt.*

A communication on Flax and Flaxseed in our next.

*** The Corresponding Committee having inspected the Accounts relating to the Magazine, according to a resolution entered into at the last General Meeting, find that several subscriptions remain still unpaid.—The Committee request that all such outstanding debts may be discharged, without delay, in order to enable them to make out their Report.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable o know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

Vol. III.—No. 13. Wednesday, 16th February, 1825. Price 2d.

ON HORSES.

(For the North West Society's Magazine.)

Mr. Editor—There is nothing I conceive more interesting to the generality of our farmers, nor more likely to promote the improvement of this district, than the introduction of an improved breed of horses, yet, strange to tell, notwithstanding the liberal encouragement held out by the N. W. Society for three years past, we have as yet had no specimen of a real compact, active, strong, well built, middle sized stallion, fit for agriculture and carriage use. The celebrated surgeon,* Cline, of London, says, that the external form of an animal is an indication of the internal structure, therefore, a broad deep chest indicates good lungs, on the size and soundness of which, the health and strength chiefly depend. A small head indicates a good breed, and greatly facilitates the birth of the foal, consequently is less injurious to the mother; the length of the neck should be in proportion to the size of the animal, that it may collect its food with ease. Our Irish horses are generally too short necked in proportion to their height. The muscles and tendons should be large, which enables the animal to travel with ease, and speed. Strength does not depend so much on large bones as on large muscles; the bones of a blood horse are small, hard, compact, and heavy—those of the cart or dray horse, are large, spongy, porous and light. Mr. Cline insists much on the necessity of selecting well formed mares—(these we certainly require in Ulster)—they should be larger in size than the male; the foal will thus be better nourished, a matter of prime importance to obtain a perfect formed animal.—Abundant nourishment during every stage of its growth, being absolutely necessary.—It was thus the breed of English horses was brought to such perfection by crossing large mares with small Arabian stallions. The celebrated Clydesdale horses of Scotland were the produce of large Flanders mares and English blood horses, thus combining agility and spirit with great strength.

COLONUS.

CHALLENGE.

Mr. Macartney, proposes to shew at the next October Meeting of the N. W. Society, a lot of six long horned Leicester Cattle against a like number of any other description for five Guineas.

GEO. MACARTNEY.

To the Editor of the North West Magazine.

Sir—Men who have been much employed in draining bogs and soft moors must have remarked, that the common shovel removes, in a very tedious and imperfect manner, loose bog-mould when it is covered with water, or is nearly in a fluid state. More water is then thrown up by the shovel than mould. To remedy this defect, I recommend to your readers who are engaged in the improvement of bogs, a riddle or net shovel, which I have used for many years with much success.—With this shovel one man will do the work of four in clearing out bog-drains. The very mention of a riddle or net shovel will suggest to any ingenious man the manner in which it may be made; but I shall give the description of that which I have used. It appears first as the skeleton of a shovel. At the socket for the handle and all round at the outside it has the form of a large Irish shovel, but it is not so much bent. The skeleton all round is an inch wide; the outside part of it, except at the face, is three-eighths of an inch in thickness, and is reduced to one-eighth of an inch in thickness at the inside. At the sides, and toward the handle the rim rises at the outside at an angle of 45 degrees, or half a right angle, which renders the shovel more capacious and stronger. The cutting edge is all flat and well steeled. The dimensions are 14 inches from the top of the shoulder to the edge, 8 inches wide near the edge and 11 inches wide at the broadest part—when the skeleton is thus formed, a strait edge may be affixed along the centre, and with a square applied to this line, marks may be pencilled on each side of the shovel at three quarters of an inch distance from each other. These lines are then crossed at right angles, and the rim marked so that every square of the net shall be three quarters of an inch except at the sides, where there will be parts of squares —Copper-wire should be used for the net, as hemp would soon rot, and iron would rust, and the rim should be made of the best Swedish Iron. This implement greatly encourages the workmen, for the soft diluted mould flies off from it, as if it were a sod of turf.

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* Communications to the Board of Agriculture, vol. 4.

I am, Sir, your constant reader,

February 5, 1825. S.

Extract from the Premium-Sheet of the Linen Board for the Year 1825.

Cultivation of Flax in Leinster, Munster and Connaught.—The Trustees, in order to encourage the Cultivation of Flax in the Provinces of Leinster, Munster, and Connaught, allot £1000 to be distributed in premiums of £5 each; and £550 for sieves to clean Flaxseed and for Hackles.

Establishment of Yarn-Greens in the Province of Ulster.—Four Sums, of £100 each, will be granted towards establishing four Yarn-Greens, in such places in the Province of Ulster, conformable to such plans and upon such conditions, as shall be prescribed by the Inspector-General of this Province, with the approbation of the Board.

New Flax-Mills.—The Trustees, being desirous of increasing the number of Scutch Mills in Ireland, have agreed to grant the sum of £2,590 towards procuring Machinery for Breaking, Beetling, and Scutching Flax, to be affixed to Mills worked by water, wind, or steam, to be erected within twelve months from the date of the Grant; said Sum to be applied in Bounties of £70 for each New Mill, subject to the Conditions and Limitations of Number hereinafter expressed—each Mill to which any of these Bounties shall be granted, must contain a complete set of Machinery for the above purposes, and must be in complete working order before the Bounty will be paid. If the Machinery of such Mill be on the Horizontal Plan, it must contain a Scutching Box with not less than five Ports in it; and if on the Vertical Plan, not less than six Sets of Scutching Handles and Stocks.

Each Person who may be desirous of getting one of these Grants, must propose to erect the Machinery of his Mill, according to one or other of the Plans which have been approved of by the Trustees. Drawings of these Plans will be found in the hands of the County Inspectors, or any of the principal Sealmasters of Brown Linen, for the inspection of the Person intending to claim, and such Person must specify in a Printed Form, that shall be furnished to him, which of the said Plans he intends to adopt, and he must also undertake, in that Form, that he will complete the said Mill within twelve months from the date of the Grant, or, in failure thereof, that he agrees to forfeit all claim upon the Board.

No Notice will be received from any Person intending to claim any one of these Bounties after the first of May, 1825; and it is expected that no Application will be forwarded from any Person whose Mill is not intended to be slated.

Each Grantee, before he can receive the Sum granted to him, must furnish to the Inspector-General an account of the Sum he has actually expended on the Mill, in order to ascertain how much his expenditure may have exceeded the Sum to be paid by the Board; and he must also enter into security, in the Sum of £100, together with two Sureties, that the Machinery shall be kept in complete order for work during the seven succeeding Flax Seasons.

The sum allotted to Ulster, for 15 Mills, at £70 per, is £1,050.

The Trustees, being desirous that the Persons intending to erect any of those Mills should complete the same upon an extended scale, have agreed, in addition to the above sum of £2,590, to grant the further sum of £400, to be applied as follows: that is to say, a sum of £8 for each Port to be erected above five in a Horizontal Mill, and a sum of £6 for each set of Scutchers above six, in a Vertical Mill.

The sum for Ulster is £150.

The Notice required to be given by the applicant in the Printed Form above described, must specify, whether he intends to erect any, and what number of additional Ports or Scutchers.

Extending the works of Flax-Mills already erected.—The Trustees have granted the sum of £400 towards encouraging the erection of additional Scutching Boxes, on the Horizontal Plan, and additional sets of Scutching Handles, on the Vertical Plan, to be applied in sums of £8 for each Port, and £6 for every set of Scutching Handles, exceeding the number already erected by the parties.

Cleaning and proper making up Flax for sale.—The Trustees having taken into consideration the large Importation of Foreign Flax into Great Britain, and the numerous Complaints which have been made to them of the manner in which Flax is cleaned and made up for sale in the different Export Markets in Ireland; with a view of remedying this evil, and for the better encouraging the cleaning and making up of Flax for Sale, have agreed to grant the Sum of £400, to be applied in Premiums in the following proportions:

Ulster, £200.—Leinster, Munster and Connaught, £200.

This Sum of £400 to be given in premiums in the principal export markets, in the months of October, November and December, 1825, and January, 1826, in such manner as the Inspectors-General, with the approbation of the Trustees, and assisted by such persons in the Trade as they may think proper to call to their aid, shall direct; such premiums to be published in the respective markets where they are proposed to be given, on or before the 1st of August, 1825.

The growth of Hemp.—The sum of £200 will be applied in premiums, to be given after the rate of 50s. an Acre, for 80 Acres, to be sown (between the 1st February and 1st June, 1825,) with good, sound Hempseed, on Land in a proper state to produce a fair Crop. The persons intending to claim the said premiums must give notice to the County Inspector of such intention, before the Seed is sown; stating the Townland, Parish, and Barony, in which he means to grow Hemp, in order that he may inspect the Land, report its state, and be enabled to visit it during the growth of the Crop, and to examine its subsequent management. Whatever portion of this sum of £200 shall remain unclaimed on the 1st of August, 1825, will go in aid of the sum of 200*l.* appropriated to encourage the cleaning and proper making up of flax for sale in the Province of Ulster.

Manufacture of Candlewick.—A sum not exceeding £100 will be allowed in paying bounties, after the rate of one penny per Pound, for every Pound of Candlewick made of the backings of Flax, in imitation of Bristol Wick, which shall be manufactured between the 5th of January, 1825, and the 5th of January, 1826, in any part of Ireland, and which shall be actually and bona fide sold by the Manufacturer thereof, at a price not less than 6d. per pound. If claims shall be made for more than £100, a preference shall be given to those who show the Candlewick to have been made from the backings produced from Flax prepared for Mill-spinning, and which Flax shall have actually been Mill-spun.

Manufacture of Thread Lace.—A sum not exceeding 100*l.* will be applied in paying bounties after the rate of 10 per cent. on the value of all Thread Lace made by bobbins, from yarn spun and bleached from Flax grown in Ireland, and sold by the original Manufacturer thereof, between the 5th of January, 1825, and 5th of January, 1826.

Wheels, Reels, Looms, &c. for general distribution.—The Trustees lay down the following rules in respect to all their future grants of those utensils:—

1. The parties applying must state the nature and extent of the efforts, if any, which they themselves have made towards encouraging any branch of industry connected with the Linen manufacture, setting forth the time at which such efforts were made, the sum expended therein, and whether such sum was received from any public fund, or raised by private subscription, among themselves.

2. The applications framed, must be sent to the Inspector-General of the Province, who will inform himself of the facts therein stated, and attest the same by his signature, adding thereto such observations as may appear to him to be necessary for the information of the trustees, at whatever period in the year they may appoint for making a general distribution of utensils.

3. The Inspectors-General are—William Marshall, Esq. Londonderry, for the province of Ulster—James Greer, Esq. Linen Office Dublin, for the province of Leinster—and Peter Besnard, Esq. Cork, for the provinces of Munster and Connaught—and as it is only through these officers that any application can properly come under the consideration of the trustees, none are to be addressed, in the first instance, to the trustees or their Secrecretary.

4. All applications sent by post to the Inspectors-General are to be post-paid, and endorsed "applications for utensils," and none other will be attended to.

5. The trustees being anxious to excite a spirit of individual exertion, in aid of their own efforts, and to extend the beneficial effects of their grants as widely as possible, have determined that they will not pay more than one-half of the value of any wheel, reel, loom, or hackle, to be granted by them for the future; nor will they pay that half, unless, previous to the time of its being demanded, it shall be proved to them, by the production of one of those documents duly perfected, which is called an utensil-paper, that the wheel, reel, loom, or hackle, so granted, has been well and truly made, of good, sound materials, and is well worth the sum described in such paper, and that the Inspector of the county had viewed, examined, and branded such utensil, and that one-half of the value of such utensil had been actually paid to the artificer, and that such utensil was then in the possession of the grantee. All these things must appear to have been done before the remaining half of the value will be paid by the trustees. Utensil-papers can always be had, gratis, by application to any of the Inspectors-General, or any of the county Inspectors, or at the Linen Office, Dublin.

6. Local Committees and Associations have been formed in several parts of Ireland, particularly in the South and West of the country, for promoting different branches of industry connected with the Linen Manufacture; and it is through these associations the trustees wish to distribute utensils, rather than by granting them to individuals; because it is reasonable to expect, that such committees and associations will not, in the first place, apply to them for aid, unless it be actually wanted; and in the next place, that whatever utensils may be granted by the trustees, shall be well and usefully employed for the promotion of the manufacture over which they preside. Where such associations exist, any individual who may think himself, or herself, a fit object of bounty, should apply, in the first instance, to that body, whose business it will be to forward such application, if approved of by them, to the Inspector-General; and where no such body has yet been formed, the trustees will the more approve of this course of proceeding, if in any such case it shall lead to the establishment of such committees and associations.

7. Associations and individuals who apply to the Linen Board, for utensils, either directly, or through any of its officers, are in the habit of repeatedly writing afterwards to know the time when their applications are likely to come under consideration, and the probable result, which is quite unnecessary, because the time to be chosen by the Board for a general distribution of utensils, must depend upon circumstances which cannot be foreseen; and after a general distribution has been made, no time is ever lost in communicating the result to any association or individual to whom a grant has been made. No communications are made, where an application is refused.

Subject to the foregoing conditions, the trustees have appropriated the sum of £4,000 to be applied in the purchase of wheels, reels, looms, hackles, &c. for general distribution; said sum to be divided among the four provinces, of which there is allotted to Ulster, £1,000.

Utensils to be distributed by the Trustees individually.—The Trustees have granted the sum of £3,000 for the purchase of wheels, reels, looms, hackles, or other utensils, to be distributed equally by themselves, individually to such persons as may be most likely to use them beneficially for the trade. The said grant to take place, and have effect, as soon as the parliamentary grant for the service of the present year, or a competent portion of it, shall have been received, from which time the twelve months allowed by law for claiming the same are to be computed.

Associations or individuals, to which, or to whom, any utensils shall be granted by any Trustee, individually out of his own portion of the above grant, can only receive from the Linen Board one half of the value of such utensils, and that half will not be paid unless upon the conditions and formalities required by paragraph No. 5, under the head (No. 11.) entitled "wheels, reels, looms, &c. for general distribution."

Trustees, and other persons, to whom utensils, have been, or shall be, granted, are at liberty to employ such artificer, or artificers as they choose; and it cannot be too generally known, that under the 21, 22 Geo. III. Cap. 35, Sec. 38, no money will be paid on account of any such utensils, "unless demanded within twelve months after the grant shall have been made.

Against the Rot or any infectious distemper, and to preserve Sheep in health.

Take the berries of the juniper well dried, and beat them small, or for want of them young tops of juniper dried gently in an oven, beat fine, and passed through a sieve; put two drachms of this powder to half a bushel of oats, and to that add about a quarter of a pint of common salt; mix it well together, and give it your sheep in wet weather, or in any contagious time, to keep them in health. You may give this medicine three or four times a year; and it is remarkable that when sheep are in health they will hardly taste it unless they are shut up in a pen, and kept from other meat; but if they are inclining to the rot, or any inward distemper, they will readily eat it. This remedy may be given for a day or two at most, giving dry hay besides. It is observed in favour of the above medicine, that where the juniper grows frequently, sheep are never subject to the rot.

Modern plan of Cultivating Hog Peas.

(From the Irish Farmers' Journal.)

Sir—As no medium is more adapted to give publicity to improvements in tillage than *The Farmers' Journal*, I have presumed to obtrude on your notice a few remarks on the cultivation of Peas; and I am more induced to trespass on your favour, because I have not any where remarked that to be a prevalent system which I am about to describe, except in the Eastern part of our county.—With us (and it may have been adopted elsewhere) it is now common husbandry to sow or drill Hog Peas in November, immediately after Wheat sowing: this will probably appear a dangerons scheme with some of your remote readers, and I must own were I recently returned from a septennial transportation I should suspect the soundness of my vision, or strongly doubt whether I was in my native climate or not. The crops of this pulse are at this moment to be seen in every parish near my abode, in a flourishing condition, and generally one inch and a half high, being quite ready for the hoe. This singular transition from spring to autumnal sowing was introduced among us (by whom I know not) about six years ago, and although our veterans expressed significant shrugs at the attempt, the result has so satisfied its followers as to make it become general: I have not met with a person sufficiently wedded to antient usages who has not candidly laid aside his prejudice, and assented to the excellency of the modern improvement, having from cautious beginnings adopted it upon a scale commensurate with the extent of his occupation. This you will admit, Sir, is adducing much in favour of it—you who can well conceive that it is no easy task to harmonize the opinions of us farmers in new fangled schemes, as may distinctly be traced from your Mangel Wurzel, your Ruta Baga, and your non-fallowing friends—but in the matter before us unanimous approbation has hitherto appeared.

The benefits to be derived from the new method well deserves to be stated. They are fourfold: each of which is most important. First, spring tillage (which is always uncertain in operation, and frequently is hurried over on account of the profusion of work in hand at that busy season of the year) is entirely superseded. Secondly, the crop is harvested a fortnight earlier, by which the sample is improved, and the straw likely to be more fit for the the racks of cattle yard. Thirdly, the produce is larger in the proportion of one to four: and in many cases of one to three, even in the same field, where one moiety has been under autumnal—the other under spring culture. Fourthly, it is an unquestionable truth that early sowing Peas frequently escape the lice, when the late sown crops are irretrievably ruined. No greater inducement need be held forth to render the change sufficiently attractive to the intelligent farmer. Let the sceptical one argue if he pleases, that a winter may arrive which would bring with it a total discomfiture: to this I would suggest that five or six seasons have transpired since the trial has been made, and which has turned out propitious; and even should it so happen once in a tenant's lease, the seed would be the only loss; the adventurer would have leisure to reflect on his pillow during many a stormy night, whether he would drill again with the same or with any other grain.

The difficulty of management seems to consist in depositing the seed at such a period of the autumn, as would allow the pea to put out of the ground just before vegetation is entirely suspended; all then is considered to be safe; the plant is then believed to be hardy enough to resist very severe weather: whereas, if sown before that critical period, or should a very open quarter (as in the present year,) make the plant run up to the height of an inch or two, there is danger to be apprehended from snow breaking down the stems, or from frost cutting them off. But after all a greater risk is incurred from sowing in January than in November: no experienced farmer would be sanguine enough to feel confident of a good crop from planting at the beginning of the year, for when the seed begins to swell, and the germ is protruding, such severe weather might and usually does set in, as would retard the act of germination, which if long suspended, decay ensues; as if nature were peculiarly jealous of interrupion in this most curious and wonderful part of her operations. But, here let me pause, for being not a philosopher but a tiller of the ground, the less I launch into such speculations the more at home shall I appear. I hope that some of your correspondents will be able to communicate from whence and by whom this mode of culture (apparently new to us) has been discovered, and how it has happened that a secret worth knowing should so long have slumbered in the regions of obscurity. Your's, &c. W. B.

Observations on the advantages of Cheese-making in Ireland.

(From the Irish Farmers' Journal.)

Sir—As Ireland is a field so extensive, and holds out so many inviting speculations for the expenditure of capital, it may not be amiss to mention the advantages of a cheese manufacture, which if duly encouraged, might be hereafter classed along with the provision export articles, and would not only afford the most ample return to individuals who would engage therein, but be also of singular advantage to the landed interest. It is clear, beyond the reach of contradiction, that any country favorable for dairies and butter making, must be also favorable for manufacturing cheese, and as Ireland has acquired a character for butter, and seems likely to improve that article, there can be no argument raised against the perfection to which the manufacture of cheese may be brought in a country so circumstanced.

If reasons were wanting in favor of the plan, the sister country could supply a sufficient store, because it is notorious, that her famous cheese-making districts have no superiority whatever over any quarter of this country, with regard to soil or situation, or any principle but what arises from the practical experience of an old and advantageous system. Now, if one country be in possession of money making manufactures, and another country with equal or perhaps superior capabilities be destitute of those advantageous applications of them, surely the misfortunes of the latter must be placed to the account of the landed proprietors, whose immediate province it is to select and encourage such pursuits as would seem suitable to the soils of their respective estates, and to the genius and means of their tenantry.

To those who have a statistical knowledge of Ireland, it would be evident that agricultural and pastoral pursuits seem to have been pointed out by the finger of nature, which advantages, backed and supported by artificial systems, such as manufactures from materials of native growth, in preference to those of foreign countries, must give a character of stability and comfort to a country that now labours under such afflicting poverty, resulting from non-employment for her population.

As encouragement is now likely to be held out for the improvement of agricultural and dairy pursuits, the manufacture of cheese might, with great chance of success, be also an object worthy of being coupled with those that require the fostering of premiums for their advancement, and in all probability if establishments of this kind were once set forward upon any thing in the shape of respectability, whether by companies or by individuals, the day might not be far distant when Ireland would supply her own markets, and perhaps compete with her wealthy rivals in that very essential article; but suppose Ireland would never look to the manufacture of cheese for an article of export, surely the supply of her own markets ought to be an object of no minor consideration, as vast sums are annually drawn from her, impoverished as she is, for that as well as for many other articles. Now, as all pastoral pursuits are on simple principles, establishments for cheese-making require capitals of no greater amount than dairy establishments—therefore, success would be more likely to attend the enterprise, and a suitable remuneration as certain as from any other speculation, because if our English neighbours were not amply remunerated by the pursuit, they would soon lay aside such labours, and substitute something else in the place of a losing occupation. Establishments of the above description may be formed with much simplicity, and on any scale that the land or capital will afford—and as knowledge in the business is an essential in this country, it will be no very difficult matter to procure instructors from England—and it is most likely that English capital, in process of time, will find its way, and be vested in this very manufacture, provided the industry will be applied to it which it deserves, and that it meets with encouragement to mature and render it as advantageous to Ireland as what it is, and long has been to the English farmer.

These observations, Mr. Editor, I hope will meet with your approbation, as they are intended for the interest of Ireland, communications calculated for which I am well persuaded your columns are ever ready to receive.—I am, Mr. Editor, your's most truly,

J. M.

Method of feeding Cattle with Flaxseed.

(From Evans and Ruffy's Farmers' Journal.)

Sir—In answer to the query of your correspondent upon the subject of giving Flaxseed to fattening cattle, I have to state for his information, (if you think it worth communicating,) that I made the experiment this year, and consider it to have answered well.

The mode which I adopted was to boil the seed down to a jelly, adding thereto a small quantity of salt, and sufficient pollard and cut chaff to make the food solid. I began by giving the seed in the proportion of 1lb. to each beast daily, and gradually increased the quantity to 4lbs. The cattle were exceedingly fond of it, and throve well. Your's

A. B.

ON PRESERVING SWEDISH TURNIPS.

(From Evans and Ruffy's Farmers' Journal.)

Sir—In answer to your correspondent, it has been a practice with me, as well many others, to draw our Swedish turnips in the driest days of December or January (or earlier, if they have got their growth,) and place them with their roots on the ground, on ploughed or pasture land, as close together as they will stand, care being taken that all the injured ones are taken out; and they will keep perfectly sound until June, if their tops are cut off in April, four or five inches, to prevent their running to seed. Some farmers in the neighbourhood of Attleborough, preserve their pudding turnips in the same way until after Christmas, and have had them sound and good, when their neighbours, who have not taken the above precaution, have been all rotten.

THE FLAX PREMIUMS

Which re-commenced on Wednesday last, the 9th February, 1825, were awarded to the following persons;—

First—£2 10, to Patrick Bradley, of Parish of All-Saints, scutched at Montglass Mill. Second—£2, to James Henderson, of Parish of Glendermot, scutched at Farm-hill Mill.

There were six competitors, but the judges withheld the other three premiums for want of merit.

TO THE EDITOR.

SIR—The following is the result of an experiment pursued on my farm last season, in the treatment of a Flax crop, according to the mode recommended by the Linen Board, and is at your service, if you think it worth publishing.

I took into my own hands about two acres and three roods, Cunningham measure, of worn out land, from tenants who had potatoed and badly manured the ground in the year 1823—and found it in such poor condition that it would not carry a crop of oats. I sowed 7½ bushels of Dutch flaxseed, and 4 of Riga, between the 20th of March and 10th of May, as the land could be prepared.

I pursued the operations of pulling, tying, rippling, and steeping, as directed by the Dutchman, in 1823, and have no doubt had the ground been in the same state as such a portion of my own farm that I have in former seasons sown flax upon, that the return of the seed would have been at least, double of that stated.

PRODUCE.

28 bushels clean merchantable seed, (saved from 34 pecks of seed sown,) at 12s. per bushel, ...	16	16	0

EXPENSES.

Carting to and from barn——	£0	15s.	6d.			
Rippling, tying, threshing, and sifting, ——————	2	15	6			
Turning on loft, ——————	0	5	0			
Cleaning for market, ——————	0	5	0	—4	1	0
On 2 acres and 3 roods, clear profit,				£12	15	0

The expense of carting may appear out of proportion to the other expenses; but the fields were more than a mile from the barn.

After the flax was rippled, the boles were sifted and placed upon a loft for three weeks, where they were turned three or four times a week; at the end of that time, they were threshed, and the seed cleaned through the winnowing machine, I send you a sample of the seed and flax, the latter, though short, owing to the dry summer, has been pronounced by spinners very good, and capable of being spun as fine as the generality of flax of this district, treated under the old system. I am, Sir, your obt. servt.

GEO. M'CARTNEY.

Mr M'Cartney's communication to us on the above subject being very brief, we have had recourse to the paper to which he refers. The specimens came also, but 1s. 8d. was charged for the carriage—by looking to the last sentence but one of the Magazine, Mr. C. might have seen how to forward the articles *free*.

We strongly recommend those farmers who wish to procure good fresh Seed Oats and Barley to inspect those lately imported from Holland, by Messrs. R. and W. F. M'Intire.—These gentlemen imported last season a small quantity of Seed Oats from Holland, the produce of which we have seen and consider very superior. It is also recommended in consequence of being nearly a month earlier than the Oats of this country.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to* 14	0	*pr cwt*
Oats	...	0	9½	– 0	11	*pr st.*
Barley	...	1	0	– 1	1	
Potatoes	...	0	2	– 0	2½	
Beef	...	0	3	– 0	5	*pr lb.*
Mutton	...	0	3	– 0	5	
Veal	...	0	6	– 0	10	
Flax undressed		40	0	– 60	6	*pr cw*
Five hank yarn		2	9	– 3	4	*pr spl*
Four do. do.		2	7	– 2	10	
Three do. do.		2	8	– 2	11	
One do. do.		2	6	– 2	8	
Hides	...	50	0	– 60	0	*pr cwt.*
Pork	..	42	0	– 45	0	*pr cwt.*

⁂ The Corresponding Committee having inspected the Accounts relating to the Magazine, according to a resolution entered into at the last General Meeting, find that several subscriptions remain still unpaid.—The Committee request that all such outstanding debts may be discharged, without delay, in order to enable them to make out their Report.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable o know what number of copies might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. HEMPTON, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

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ON FALLOWS.

(From the English Farmers' Journal.)

Sir—Practical men generally write according to their own experience, if their practice or observation has not extended to every possible case, in some instances their sentiments may be unintentionally erroneous.—Age and experience, accompanied by knowledge and probity, are certainly entitled to our sincere respect and veneration : but the sweeping assertions of one of your correspondents, condemning, in toto, all naked fallows, without regard to difference of soils, climate, or local circumstances, tend only to prove that, under grey hairs is not always to be found profundity of thought ; and that the greatest degree of well digested knowledge and information does not invariably exist in the hoary head. Every intelligent farmer must know, that in the proper attention to soils, climate, and various local circumstances, consists the grand art of practical agriculture. Agreeably to this, turnips, or other green crops, cannot be advantageously substituted for naked summer fallows on stiff clay soils. Nature has furnished us with plants and vegetables of various descriptions, natures, and habits : and it is the business of man to select, appropriate, and apply them to the different soils and other circumstances to which they are suited, and for which they were intended. That turnips and other green crops may be beneficially cultivated on dry light soils every practical farmer will admit ; and the impropriety, or rather the folly, of making naked fallows on such land, no man of moderate experience will deny. On deep cohesive loams, possessed of a degree of friability, in a propitious season, a good crop of turnips may certainly be raised ; but as it has been judiciously observed, the difficulty of disposing of them completely defeats the purpose of the husbandman. Clover and tares have frequently been substituted for naked fallow. This practice on heavy loams sometimes answers a very good purpose. If the crops can be got off in sufficient time for the land to be broken up about Midsummer, and the season proves dry and favorable, repeated ploughing, &c. may bring the soil into tolerable condition for wheat. The risk, however, is great, as the success of this system depends altogether upon the season ; but on stiff wet clays, particularly when the land is foul, naked summer fallows are indispensably necessary to bring it into a proper state for producing another profitable course of crops. In vain do we attempt to plant green crops on such land, even under the row culture, with a view to clean and prepare it for wheat. Exhausted by cropping, and productive of little besides weeds, the appearance of the intended crops soon becomes languid and unproductive. Drenched by occasional summer rains, so that it cannot be trodden by the foot of man or beast—and again, parched by the scorching rays of the sun, at a season when the crops are covered with weeds, the land is impenetrable by the horse or hand hoe, and cannot be cleaned. Thus the season passes on, the crop is lost, and the land is ruined—being left in a worse state than at the commencement of this pretended fallow. Bastard fallows indeed have of late been too much practised, and have proved very injurious to the stiff lands in various districts of England. The evil is not confined to the wheat crop only, but every one in the succeeding course also participates in their deteriorating effects. The high rentals of the country, and the late depression in the prices of agricultural produce, have been the cause of many farmers having recourse to this system, in order to get something out of the land, instead of suffering it to lie in a state of quiescence. Such policy, however, is bad ; as it ultimately leads to results hurtful to their own interest, and to that of the landlord.—If we would farm well, and obtain good crops, we must not pursue a plan to which the nature of the soil is not adapted, by discontinuing the good old practice of naked summer fallows, from which the country, from time to time immemorial, has reaped so much benefit. It was my intention to have pointed out more particularly, some of the leading advantages attending naked fallows ; but this shall be reserved for a future communication.

W. GIBSON.

On the use of Steam in drying Malt, Grain, and Potatoes; with observations on Highland Potato Husbandry.

Sir—I beg leave to communicate, through the medium of your valuable publication, the result of some experiments I happened to try several years ago, a short sketch of which was communicated to the Board of Agriculture, soon after its institution; but of which no notice was taken.

It occurred to me, that barley might be made to germinate, and to form malt, by the heat and moisture of steam; and that the malt already made might be dried by the heat of the same steam which moistened and caused germination on a new quantity of barley.

To ascertain this point, I procured a small tin-boiler, with a long tube extended from its top, similar to a small still. The boiler had a small tube inserted in its shoulder, by which water might be introduced, and closed by a cork. A barrel had a square aperture cut in its side, about three inches above its bottom, and accurately closed by a stopper of wood. The other end of the barrel was taken out, and, in place of wood, it was accurately closed by a tinned plate.

The barrel being placed upon a pedestal, a quantity of barley was introduced by the aperture already described, and equally spread upon its bottom, to the depth of near three inches. The boiler half filled with water, being placed upon a small furnace, had the end of the long tube extending from it inserted in the bung-hole of the barrel, and made tight by wet paper.

Soon after the water began to boil, the barrel was filled with steam, and the tinned plate upon its top became hot. Upon this was spread a quantity of wet malt, which was occasionally stirred, and it soon dried into what the brewers call pale malt; that is malt perfectly free from calcination, which gives a brown or porter tinge to the ale.

Meanwhile, the barley in the bottom of the barrel became thoroughly soaked by the moisture, which dropped from the tinned plate above. It swelled; but, though I tried several parcels of the same grain, it never was observed to germinate.

I afterwards learnt, that this grain had been much injured by a wet harvest, and that it had been kiln-dried to make it keep.—Whether its want of germination was owing to this cause, or to its exclusion from oxygen, I cannot pretend to say: for at that time the power of oxygen, in stimulating the germination of seeds, was not generally known.

It afterwards occurred, to try whether potatoes might not be dried by the heat of steam, so as to preserve all their principles unchanged.

For this purpose a few of them were boiled, their skins taken off, and bruised by a blunt stick, usually employed for that purpose. The bruised potatoes were equally spread upon the tinned plate already described and frequently stirred, while steam was blown into the barrel.

In drying, the potatoes were considerably reduced in bulk, and concreted into small hard bits of various size: but few exceeding the ordinary size of peas. These bits were pounded in a mortar, and reduced to a meal or flour, which retained the natural taste of the potato, only more concentrated.

Parcels of this meal were exposed in rooms without fire, and did not exhibit any sensible tendency to absorb moisture, or to become damp; while, in the same places, oat-meal, ground from oats hard dried, became sensibly damp, and increased in weight. Other parcels were repeatedly exposed to very intense frost, and as long as my observations were afterwards continued, they never exhibited any sensible alteration of quality, in consequence of the frost.

These experiments were made during the winter of 1794-5, when the ground was covered with deep snow; and, as I left the place early in spring, I had no opportunity of trying whether other roots, or plants, might not be preserved, by drying them with steam, as well as potatoes; nor has any opportunity of following out these experiments ever occured to me since.

Perhaps the failure of germination in the barley may have been caused by the extreme cold which prevailed while the experiment was made. My idea was to subject the barley to a warm summer shower, from the steam condensed on the tinned plate above it, and to preserve its heat, as nearly as I could, from 100° to 150°, which is the heat exhibited by good soils, even early in the season, after exposure to the sun's rays. But however I might manage matters during the day, I always found my barley nearly frozen next morning. Perhaps, in an apparatus of large dimensions, where sudden variations of temperature cannot take place, the experiment might have succeeded better.

But whatever cause may have obstructed the germination of the grain, I flatter myself that some useful results may be deduced from the experiment I have attempted to describe.

1. That the best pale malt for making beer, may be produced, and only produced, by drying it with steam.

2. That all grain which is reserved for seed, or which is afterwards intended to be malted, should have its dampness corrected, and be rendered fit for keeping, only by the heat of the steam; because it is well known, that exposure to a naked fire, however, cautiously it may be managed, destroys a great part, not the whole, of the embryo germs of seeds.

3. From the slight opportunities I had of making observations, it appeared that meal, from grain over-dried, after a short exposure, more greedily absorbed moisture, and sooner became damp, than meal from grain that had been moderately dried. Hence that drying by steam is preferable to any other mode, for grain that is to be reduced into meal.

4. It appears certain, that potatoes may be reduced into meal, or flour, capable of being kept any length of time, or of being exported to any part of the world. In place of the pestle and mortar I employed, that they may be ground in any ordinary mill, or even converted into the finest boulted flour, without bran or residue; because what does not pass through the boulter, can be returned into the stones, and ground over again. Such flour may be made into cakes, puddings, porridge, &c. &c.; or as has been ascertained by experiments with bruised potatoes, by having a certain proportion of wheat flour added, it may be made into the finest fermented loaves. These experiments have only been made with bruised potatoes; but as, in drying by steam they did not seem to lose any thing but water, and the only effect was a concentration of their principles, it seems probable that a smaller proportion of wheat flour may be sufficient to make them ferment into bread, than is necessary to be added to the potatoes when only bruised.

But I have an utter aversion to the regions of conjecture, and do not wish to go an inch beyond the limits of ascertained facts.

In my many peregrinations through the Highlands, and Isles, I have often been forced to lament, that our Highland Society did not know more of the country they undertook to improve. With them, the cry was improve! improve! without considering whether their improvements were either expedient or practicable, in the existing situation of the country. In place of improvements, they should, in my humble opinion, have begun with acquiring an exact knowledge of soils; the means which nature has provided for their fertilization; the actual state of agriculture; and the manners and dispositions of the people in the extensive district they undertook to improve. Such knowledge cannot be expected from a native of the Highlands, but must be derived from strangers, who have an eye to discriminate, and a judgment to appreciate. Had such knowledge of the Highlands and Isles, their existing state, and natural resources, been laid before the public it would have been easy to suggest improvements that were not only expedient but practicable.

I shall only adduce the premiums issued for raising potatoes, in the lazy-bed way, on moor or moss, as an instance how far the exertions of the Society have been misapplied.

The Society having laid down no rules, or plan, by which the work should be conducted each person contending for their premiums, proceeded, as whim or conveniency prompted him, to mangle and abuse; and they have actually rendered unfit for subsequent cultivation, considerable tracts both of moss and moor, on the mainland and islands. Instead of running ditches, to take off the water, they piled up the lazy-beds, so as to raise them above the water; and formed them in such cross and whimsical directions, that the land cannot now be cultivated, without undoing all they have done, and expending much more than it is worth. It was in vain that I remonstrated with many of them; pointed out the lines in which they ought to have run drains, before they broke the soil; and showed how they ought to have formed their beds in straight parallel lines, so as to render the land capable of future aration.—I tried to convince them of the absurdity of piling up such high mounds of earth, where they had only a few miserable tufts of potatoes on the top of the mound, while the intermediate spaces were filled with water like canals. It was in vain, too, I represented the benefit that would result from laying shell-sand upon their lazy-beds, which was often contiguous to them, and equal, in the proportion of its calcareous matter, to the best lime. 'The Society had said nothing about these matters,' was a tickler, a knock-em-down, which rendered all my arguments ineffectual. This shews, that when people are in the humour of travelling with a bandage about their eyes, they may happen to do harm, even with the best intentions.

The potato delights in a loose, friable, though dry soil, and in a moist climate.—From the Island of Arran to the Orkneys, including the Hebrides, this root, with a few exceptions where the soil is unfavourable, attains a degree of perfection seldom equalled in other places. In this extensive tract, the modes of culture are very various; and the best may easily admit of improvement. But here potatoes are seldom an exchangeable commodity, because they are not within the reach of markets. Every family endeavours to raise as many as will supply its own consumption, and no more. But were the practice of drying them on steam-kilns, in the way I have described, introduced; as the quantity that may be raised in these regions is unlimited, so they might export vast quantities of nutritious vegetable food, for the supply of our cities, our navies, and the West India market. It does not seem necessary to grind the potatoes into meal in these regions, as they can be ground where they are to be used; and, from experiments, it appeared that the dried bits kept fully as well as the meal.

The quantities of drifted sea-weeds (fuci) in these regions, are immense; but at present they are only collected and are applied at the time of ploughing and sowing. I have seen such quantities blown on shore during summer, that their putrefaction on the beach infected the air to a great distance, with pestilential vapours. Were the people insured in a certain vent for their produce, they would see the propriety of forming them into composts with moss, which compost would be applicable to every soil but moss; or they might compost them with earth or clay marl, which abounds in many places, which would make an excellent dressing for moss, or any soil.—As shell-sand and lime-stone abound in these countries, they may either be applied directly to the soil, or mixed in the composts. When the interior country is laid open by those roads which are forming by the aid of Government, excellent shell marl will be found in many lakes and swamps, which may be applied to the improvement of land. There composts may be made with the dung of cattle; and composts, when judiciously made and applied, always produce potatoes of a better quality than the putrescent manure, when applied by itself.

The potato is an excellent plant for bringing moss, or moors of a friable soil, into cultivation; and the first crop generally pays all the expense, with profit. As it thrives so well in these countries, I have no objection that the extension of its culture should be stimulated by premiums from the Highland Society, provided they be so conducted as not to set on the people to mangle and abuse the land, and render it good for nothing afterwards. But I see no utility in forcing the production of potatoes, in countries where they are not convertible into money; and where they can only be consumed by the people who raise them. Were their weight and bulk reduced, and their substance rendered capable of being preserved any length of time, by steam kilns, their production might be stimulated by premiums, or othe wise, to an unlimited extent.

Were it not to encroach too much upo your time, I could suggest a plan of a stea kiln of this sort, covered with thin sheet iro which would effect the objects here describe with the smallest possible expenditure, of fuel. I am confident such kilns would consume much less fuel than the common fire-kilns; and that they might be advantageously used, not only to dry potatoes, but pale malt, and every species of grain. I am, &c.

PROJECTOR.

On the selection of Grain for Seed, and the advantages which would arise from having a Farm or Farms set apart for the raising new varieties.

Sir—Few subjects, of greater importance to the growers of corn, have been discussed in your Magazine, than the selection of grain for seed; and it was with much pleasure I perused some excellent hints on that business, in the opening paper of this volume, by a gentleman who signs himself Miso-Mixis.—Indeed, I am so fully satisfied concerning the extent of the benefit that might be derived, were none but the purest and soundest grain sown, that I take the liberty of submitting to your consideration, a few thoughts on the best mode of providing the public with a regular and constant supply of 'pure and unblended varieties of the different sorts of grain and roots, adapted to the climate and soil of the British isles.'

In the majority of corn farms, the operations to be executed are so numerous and complicated, as to prevent farmers, in ordinary cases, from bestowing that sedulous attention which the breeding of grain requires; and it often happens, that the genius or disposition is imperfectly calculated for carrying forward a series of processes, which require much judgment and discrimination at the outset, and great attention in every stage, till a conclusion is reached. Hence it appears, that if we wish to select and cultivate new varieties of seed, or bring those to perfection with which we are already acquainted, it would be proper that particular farms were devoted, or set apart entirely to these purposes. A breeding farm of this kind, in the hands of a skilful and steady person, is a desideratum in husbandry. We see the benefits that have been gained by selecting and breeding from the most approved and best formed species of live stock; and, were the like care used to select and cultivate the largest and best shaped grain, there is no doubt but a benefit of still greater extent would be obtained by the corn farmer. In my humble opinion, an establishment, or establishments of this nature, would not only prove of great utility to the public, but also be eminently beneficial to those who undertook them. The difference of increase, and the intrinsic value of the grain produced from good and bad seed, or in cases where the particular species has degenerated, is so great, that, unquestionably, every cultivator, of the least sense or discernment, would resort annually to such breeding seminaries, with the same avidity as is displayed by the breeders of sheep when they attend the tup-shows.

I am well aware that several farmers, much to their credit, do already bestow a good deal of attention on the selection and culture of the most improved varieties of grain, and that much benefit has been derived from their efforts. To one or two active and enterprising persons in East Lothian, the public are indebted for the best variety of thin-chaffed wheat which is to be found, so far as my knowlegde reaches, in Great Britain; and, from their perseverance, we may justly expect that fresh supplies of pure and unblended seed will be provided to others, who want either leisure or capacity to breed for themselves. It is obvious, however, that such selections as I have alluded to, must necessarily be made on a limited scale: at any rate, there is a hazard that other avocations may interfere, and prevent them from being completely successful. Be this as it may, it is plain, that where the attention is entirely confined to one object, success may be more confidently expected, than when divided, in a multifarious manner, or directed to different objects.

It also deserves notice, that the finest and best variety of grain will degenerate, and fall off in a few years, unless fresh selections are constantly made of the most approved stalks, from which, only, a new series should be reared. Had not the potato oat been introduced a few years ago, Scotland stood a great chance of being soon as badly supplied with oats as our sister country, where a sample of good quality is rarely to be got, except of the Polish or barleycorn variety. In point of real value it is demonstrable, that potato oats, on good soil, exceed those ordinarily cultivated, by at least twenty shillings per acre; therefore, their introduction may be regarded as of immense importance to the country. There is cause, however, to apprehend, that the superior excellence of this variety will soon be lost, unless fresh selections are made; for already a considerable inclination to degenerate has been witnessed. The origin of these oats cannot be satisfactorily traced, but I have often thought they were derived from the variety called Early Essex; or at least selected from some principal stalks of that variety.

The importance and utility of devoting particular farms to the breeding of corn, receives additional support from the modern improvements made in the like way and manner upon live stock. According to the principles or rather the practice, of many corn farmers, it is sufficient to sow seed, without troubling yourself whether it is pure and unblended or not, and without caring more than that it is of the species you want to cultivate. The wisdom of such people, is equally profound with that of breeders of a different kind, who take their cow to the bull, for no better reason, than that he is able to procreate a calf; or put a tup to their ewes, merely because he is of the masculine gender. No doubt such people may have their calf and their lamb, but they have no reason to expect that either of them will be handsome and well-shaped. In like manner, the farmer who neglects to select his seed-corn, and to choose the purest and most unblended grain, will always reap a crop inferior in value to what might have been obtained had he paid attention to these circumstances.

In short, a careful attention to the selection of grain for seed, may be considered as one of the most important duties which appertain to the character of a good husbandman. Indeed, that the best of grain should be reserved for seed, seems to have been long an established principle in this country; for when rent was paid in kind it was either tacitly or expressly understood, that the tenant had a right of selecting such a quantity as was necessary for the succeeding year's seed. Though the weightiest and soundest grain was in this way retained, and, abstractedly considered, such must always produce the strongest plants, yet it is more than probable, that little care was shewn to select new varieties, or breed from the largest and most prolific stalks. These practices may, therefore, be considered as modern improvements, and as yet in an infantine state, though advancing fast forward to maturity. That their progress would be accelerated, by establishing breeding farms, will hardly be disputed: and these hints are thrown out, with a view that the subject may be taken up by some other of your correspondents, of more extensive information, and possessing greater knowledge of botany than your obedient humble servant.—*Scotch Magazine.*

T. A. Knight, Esq. has transmitted the following agricultural information to a provincial journal:—"A good deal of the strong wheat soil of Herefordshire remains unsown, and must be sowed immediately, and it is important to select seed corn of early habits. I tried the experiment of selecting seed wheat from a warm gravelly soil in a warm part of the country, and other seed wheat of the same variety, (the common redstraw,) from a cold white clayey soil, in a very cold part of the country. Both were sowed at the same time, and upon contiguous ridges, when the crop which sprang from the seed corn which had grown upon a warm gravelly soil ripened a fortnight before the other. The advantages of selecting such seed must be obvious to your readers. I have stated facts—the transactions of the Horticultural Society show that fruits such as the apple and pear, and perennial plants, acquire in hot climates habits of ripening late, whilst cultivated natural plants acquire the power of ripening early, by having through successive generations, had their period of maturity accelerated. The Scotch farmers purchase seed barley from the warmer soils in England, having found that the crop which springs from this will ripen, upon their cold hills, nearly three weeks earlier than those varieties which have adapted their habits to their late and cold climate."

At a meeting of the Dover Agricultural Association, held on the 29th of January, 1825, at the Royal Oak Inn, in Dover; resolved, that this meeting, viewing with great satisfaction the convictions which have lately taken place for fraudulent returns of corn sold at the Marklane, now takes this opportunity of expressing its satisfaction with the present corn laws, provided they be enforced as they lately have been; and humbly hopes that the legislature will not be influenced by any designing political economists, to make any alteration in those laws under which agriculture is by very slow degrees, recovering from its long degraded state, and when commerce and manufactures are flourishing in an unprecedented degree.

JOHN TAYLOR, Chairman.

On the destruction of the Moth that infests Fruit-Trees.

By Mr. Pemberton, Musgrave, Gardener, Mayfield.

(From Memoirs of the Caledonian Horticultural Society.)

The destruction of the insect which infests fruit-trees, is a subject which has engaged the attention of many ingenious men, who have from time to time proposed various methods of getting rid of this formidable enemy; but as none of them seem ever to have fully realized this object, I humbly offer the plan I have adopted for this purpose to the Horticultural Society. My plan is one which I never knew practised before, and it has the effect of almost completely clearing the trees of vermin. It is as follows:—

I examine the trees I wish to clear in the beginning of June, that being the time the insects begin to leave the chrysalis state.—When I find one of these of a dark color, I am aware that the insect will make its appearance in the course of a few days. That chrysalise I examine daily until the insect comes out, and although I do not see the insect emerging from the shell, yet I am sure to find it in the neighbourhood of the covering which it has left, exhausted with fatigue in consequence of the exertion it has made in extricating itself from confinement. At first I put a few of the chrysalids into paper bags, which gave me an opportunity of examining them minutely. I also watched some of the chrysalids of the bore-worm, which causes gooseberries to fall off in great quantities by boring into the berry, and I found that fly to be of the same class with those which infest the apple, pear, and cherry-trees. I was also able to prove decidedly, that the females come into existence full of the rudiments of eggs, which I found by dissecting several of them, and examining the ovarium. I also found, by carefully noticing every insect which I caught, that the greater number were females.

After I had thus made myself completely acquainted with the enemy with which I had to contend, I continued my labours, going over a number of wall-trees which I fixed upon for the experiment, with a branch of willow tree in my hand, with which I switched the leaves and branches for it is amongst the leaves and branches, of the trees the insect secretes itself; but in order that it may be done with more expedition and success, I would recommend a birch besom to be used in preference. Although I did not ask or wish for any assistance while the experiment was going on, yet it will be proper that there be two persons, one to go over the leaves and branches of the trees, in order to make the insect leave its retreat, and one with a net attached to a pole to catch the fly, or to destroy it if it should alight on the ground, as it will be apt to do, if the day is clear and sunny, for these insects cannot bear the bright rays of the sun, which is the cause of their remaining amongst the leaves during the day; but should the day be dull, the net will be highly necessary to catch the insect, as it will then likely fly to some distance before it alights. This operation must be continued until all the insects are destroyed—but it is not needful that it be performed every day but every other day, as the insects are some days from the chrysalis state before they are ready to deposite their ova, which is done during night.

As I have only been speaking of the method I take with wall-trees, I shall also state the method I follow with standards. The time for going over them is generally two or three weeks later than the wall-trees. It is a singular fact that the insect keeps pace with the leafing of the tree. With the standards nothing will be required but the net, as the branches can be gently shaken, which is sufficient to cause the fly to leave its nestling-place; but as it might be the means of bringing too many down at one time, if the tree was shaken all at once, care must be taken to shake the branches one by one. Where the trees are lofty, a pole with a hook attached to the end may be used.

The net used is made of a strong black auze, that colour being best for the purpose. t is a yard and half in circumference, a foot eep, and attached to a whalebone rim.—The handle is made of common wood, about a yard and half long, which length I found most conveneint; but that can be increased or diminished as individuals may think proper. With regard to the manner in which it should be used, all I have to say is, that I kept the net in my right hand: and the moment an insect was driven from its place, I swung the net in the direction opposite to that in which it flew. If I missed in the first attempt, the second generally succeeded.

This plan of destroying these moths, has succeeded equal to my expectations—indeed it carries conviction on the face of it. It is not only simple and can be performed at very little expense, but it is sure, and can be acted upon in the most extensive orchards.

As it has often been said, if I may be allowed to reason from analogy, that he who kills the weeds in his garden before they can injure his crop, or deposite seeds in the ground for the production of a new race, is acting upon the most rational principle, so must that method be preferable to all others, by which insects can be destroyed before they can possibly deposite their ova in and about the tree, for the production of a new progeny, particularly as the idea of insects coming in the east wind, engendered in the haze, is completely exploded. When we consider the great number of eggs one destroys by killing a single female in the beginning of the season, the utility of the plan I think will at once appear. Supposing, then, that any person, by going over twenty or thirty trees each day, which can be done easily in a few hours, kill two hundred insects, and, for a very moderate calculation, suppose the one half of them females, allowing only one hundred eggs to each, there will be no fewer than ten thousand destroyed or prevented.—If the operation be carried on for a month only, every alternate day over this number of trees, the amount of eggs destroyed will be 150,000. This is actually what I have done myself. There is surely, then, very little reflection necessary, to convince any unprejudiced person, that by following the same plan he might soon bid defiance to such a formidable foe. When we also take into consideration how much the success of the crop depends upon an uninjured foliage, and a free and strong expansion of blossom, the propriety of adopting this method must be obvious—hitherto all the plans of liming, oiling, peeling, &c. have failed.

THE FLAX PREMIUMS

Were adjudged on Wednesday last, to the following persons:—

1st Premium of £2 10s. to William Thomson, Parish of Killlea, scutched at Altaghaderry Mill.—2d do. of £2 to James Henderson, Parish of Glendermot, scutched at Farm-Hill mill.—3d do. of £1 10s. to Michael Gallagher, Parish of Killea, scutched at Carrigans mill.

There were but three competitors—the Judges being unable to decide the two first premiums, they were, of course, drawn by lot. Mr. Henderson's flax yielded eight cwt. to the acre.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt*
Oats	...	0	9½	–	0	11	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3	–	0	5	*pr lb.*
Mutton	...	0	3	–	0	5	
Veal	...	6	6	–	0	10	
Flax undressed		40	0	–	60	6	*pr cw*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	50	0	–	60	0	*pr cwt.*
Pork	..	42	0	–	45	0	*pr cwt.*

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the ollowing manner:—

North West Society,

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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N. W. SOCIETY'S MAGAZINE.

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(From the Scotch Farmers' Magazine.)

SIR—Among the many useful suggestions which so often appear in your valuable Magazine, there is one which has not presented itself, at least to my view; I mean an establishment in the principal towns of Great Britain and Ireland, of schools or work-rooms, in which might be taught drawing, and making models of the most approved implements of husbandry, and of machines employed in manufactures, as well as in agriculture, both such as are in present use, and such new inventions and improvements as may hereafter be introduced and recommended by men of skill and experience.

The general utility of such establishments must be obvious, when it is considered that many an ingenious farmer, and even the ordinary ploughman, who daily experiences the advantages and disadvantages of the different sorts of ploughs, and other implements of rural labour, would thus have an opportunity of laying before the public any proposed improvements, without launching into the great expense of constructing, on a large scale, the implement or machine itself.

The plough and cart-wrights in the country villages cannot well dispense with an academy of this sort; for, although many of them make a common cart or plough of sufficient strength and neatness, yet a great number work by old established rules; and having in general but little mathematical knowledge, they cannot be expected to vary or enlarge the application of even many known principles. Besides, it is very difficult to convey one's own and original ideas, when something quite out of the ordinary road, or method of construction, is proposed. In fact, it is well known also, that many ingenious men, in the lower orders of society, with perhaps what may be termed an eccentric turn of mind (for ingenuity and eccentricity are frequently combined,) cannot convey their notions with sufficient accuracy, to enable the person who requires the explanation to execute the scheme intended. An instance of this absolutely took place some years ago, in the neighbourhood of Edinburgh (consistent with the knowledge of the subscriber,) of a blacksmith, who had contrived an improved method of working the common churn, by which one person could produce, from the same quantity of milk, a greater proportion of butter in less time, and with much less labour, than is usually necessary. Upon its being proposed for him to instruct a young man, who was then to leave the place, he candidly declared that he could give him no *verbal* information, but he might attend his shop, and, as he termed it, "*look at me*;" by which he undoubtedly meant to look at him while working. This ingenious blacksmith, from being a good modeller, soon imparted his ideas to his tyro, almost without a word; the machine was constructed on the common working scale, and answered admirably.†

The above instance (and many such like are doubtless well known) demonstrates the great importance to young tradesmen and others, of schools for drawing and modelling, when placed under the direction of persons of known skill and experience, and proves their still greater importance to persons of a mechanical turn, who, by means of such instruction, would be enabled, not only to communicate their improvements to others, and explain, the advantages of them, but also to give a form to their ideas without the assistance of a mechanic, and subject the results to the test of experience. But, to sum up the whole—As theories and experience do not sometimes exactly agree, the young modeller, if unhappily his favourite invention should fail in practice, would not fall under the lash, or gratify the illiberal and ungentlemanly sneer of those who think nothing right, because it was not their own discovery, or that they were not consulted in it. That this is too often the fate of real merit and inventive genius, is much to be deplored.

While noting down the above observations, I was agreeably surprised at being informed that Mr. Andrew Gray, author of "The Experienced Millwright and Ploughwright's Assistant," (books of considerable value to both professions,) who has also executed, with much credit to himself several designs for the honourable Board of Agriculture, has anticipated me, by reducing to practice the plan which I am now proposing in theory, viz.—the instructing young men in drawing and modelling the most approved implements of husbandry, and of machinery employed in agriculture and manufactures, with the latest discoveries and improvements. The school or academy for these purposes is in a central part of the city of Edinburgh; and as Mr. Gray has been the first, perhaps, in the kingdom to originate and undertake the charge of an establishment of such importance to manufacture and agriculture, he will, no doubt, obtain the patronage of all who are friendly to improvement. MONITOR.

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† This improvement on the common staff-churn was tried at the farm of Ravelstone, near Edinburgh, more than twenty years ago, and approved of, upon inspection, by a gentleman resident there, eminent for his philosophical and mechanical knowledge.

RAPHOE PLOUGHING MATCH.

The following are the names of the owners of ploughs, also the names of ploughmen, at the Ploughing Match of the Raphoe Branch of the North West Society, at Edenmore, on the 14th day of February, 1825:—

GENTLEMEN'S CLASS.

Owners' Names.	*Ploughmen.*	*Prems. awarded*
Lord Bishop of Raphoe...	J. M'Elhinny,..	1st prem. £1 15
Sir S. Hayes, Bart.........	Andrew Burrens.	
Johnston Mansfield, Esq...	Patrick Curry.	
John Cochran, Esq.........	Patrick Breasland.	
John Speer, Esq,...........	William Lafferty.	
Mr. William Hamilton.....	C. Gillespy...	2d prem. £1 5
FIRST CLASS OF FARMERS.		
Mr. David Wilson.........	Wm. Wilson...	1st prem. 1 15
Mr. Andrew Sayers.........	C. Sayers,......	2d do......1 5
SECOND CLASS OF FARMERS.		
Mr. R. M'Kinley,.........	R. M'Kinley, jun...	1st £1 2 6

William Walker,
Hamilton Gillespy, and } Judges.
William Bonar, Esqrs.

The Raphoe Branch of the North West Society's Ploughing Match took place upon the farm of John Cochran, of Edenmore, Esq. on Monday, the 14th instant, where nine ploughs started for competition—six in the gentlemen's class, two in the first, and one in the second class of farmers. Mr. Hamilton, from the proficiency of his ploughman, and the premiums he obtained heretofore at the Branch ploughing matches, was, according to the regulations of the Society, obliged to enter in the first class, where he was adjudged a premium. In the first class, the work was performed by the two successful candidates in a style that I hardly have seen any ploughing to exceed, at any ploughing match; for straightness and regularity of the furrow slices nothing could surpass it, still the Judges had not much difficulty in making the decision between the work of those two persons. In the first class of farmers, the matter was well contested, and the Judges had some difficulty in ascertaining which of the competitors' work was superior to the other. The person who finished the ploughing of his half rood first, took an hour and thirty-two minutes to perform the work, and the latest was done in a quarter of an hour after, all a considerable time within the prescribed period. If gentlemen would cause their ploughmen and ploughs to attend on such occasions as ploughing matches, more regularly than they have done hitherto in this district, it might have the effect to stimulate farmers to follow their example, and both classes would be benefited by the experiment. I cannot attribute this neglect on the part of the first class of persons I have mentioned, to any supineness with regard to the welfare of the country in all other respects; and as to the latter class, whether their backwardness is to be ascribed to avarice, not being deirous of risking any thing without a certainty of reaping some pecuniary advantage, or being disposed to follow the old mode of husbandry, practised by their forefathers:—On these two positions I will not take upon myself to decide.

This ploughing match was numerously attended, by almost all the respectable persons of the neighbourhood, who took a very lively interest in encouraging this laudable practice by their presence; also, a great assemblage of all other classes were congregated there—The ground was tolerably propitious for the occasion, although from its fertility (notwithstanding having been four years' lay,) it was too brittle. The owner's hospitality was conspicuous, he having caused refreshments to be given to several parties of the spectators, who partook of the collation at his house. JOHN SPEER, SEC.

SEED CORN.

The following are the suggestions offered by the Highland Society of Scotland on the subject of seed corn.

1. Exposure to frost renders corn very unfit for seed, even though its weight be nearly equal to good corn, not injured by frost.—The plants rising from corn that has been exposed to much frost are always weak, and the produce small. In seasons, therefore, like the last, in which much frost has prevailed in harvest, no corn should be sown that has grown in high districts, or at least none that has not been strictly examined, and its quality as much as possible ascertained. Similar, or nearly similar bad effects to those that attend using seed that has suffered from frost, are also found to arise from using corn that has partially sprung in the ear from wet weather.

2. While, accordingly, corn that has been hurt by frost, snow, or rain, ought never to be used for seed, it luckily happens that it is easily distinguished from good corn. The latter is plump and full, of a peculiar healthy colour, well known to farmers and dealers; and in the case of oats, is commonly free of chaff—whereas the former is shrivelled—for even the best of it is never entirely full, and it appears as if it were bleached, and does not easily part with the chaff. Barley likewise loses somewhat of its colour, and becomes paler, with black ends in some of the grains.

3. Washing in strong brine, or other saline mixtures, proves useful as a test of the seed steeped in it; this operation serving to distinguish faulty, or light and weak seeds, from the more perfect and wholesome ones, by allowing the former to be collected off the surface, while the latter remains at the bottom of the mixture.

4. Besides washing or floating, it may form the first part of an experimental process for trying the quality of seed, treating a portion of it in much the same way, in all respects, as barley is in malting; and when this is done, the number of seeds that spring, or send forth radicles, should be carefully ascertained. Even the rootlets, or radical fibres springing from any seed so treated, should be attended to, as the sounder and stronger the seed is, these are the more numerous and strong, and the chance of success in the crop is likewise the greater. Where they are very few and small, the plants may not afterwards grow in due vigour and survive, especially where the soil is poor or wet, and the climate or season cold. Though this be a mode of trial that has been long recommended and frequently relied on, yet perhaps it may be found a little troublesome, requiring more address and room or convenience for employing it, than many farmers may possess. It becomes, therefore, an object to use some other less difficult mode of investigation, such, perhaps, as the one to be next mentioned.

5. This other way is by taking a small quantity of seed promiscuously from the general parcel, (and if the numbers taken were counted, so much the better) then sowing it, either in a pot, or in a bed, or any collection of ordinary soil, (as that taken from the field wherein the crop is intended to be raised) in an open shade, the spot where it is placed being accessible to the light, and sufficiently airy, but still such that it can be duly protected from frost—which last object may be attained, by laying over the earth containing the seed, some loose straw, or spars, or small branches covered with straw, when such protection may be thought necessary, as at night, or during frost; and care may be taken to sprinkle some water on the spot or bed, as occasion may require. It should next be observed, what number or proportion of the seeds spring up, and continue thereafter in a thriving state as plants. When any of them fail, the rootlets of such will be found fewer in number than in the case of those which survive in vigour. It ought to be remembered here, however, that the radical shoots are apt to be more numerous in the case of rich moist land, than in that of an opposite character; and they likewise divide and become more numerous when the land is somewhat firm, than when it is loose or open in texture; circumstances merely taken notice of in order that, in a course of trials, allowance may be made for their effect in occasioning at times small differences in these respects, which could not altogether be referred to the quality of the seed used.

Before spring, or early in that season, such examinations as those mentioned should be gone about, on purpose to have due time to vary and repeat them, for the sake of obtaining a satisfactory result, or of being capable to determine how far any parcel of grain should be made use of as seed.

6. Where proper seed cannot be procured in the district or near neighbourhood of the farm were it is meant to be sown, recourse must be had to other places; but in doing this, it will be material for the farmer to have some skilful practical person on the spot, carefully to examine and select the seed, being particularly attentive to that which has been well preserved. This will not be detected by a superficial view of the grain, which in different varieties is often of different colors; but it may be readily discovered by attending to the smell, appearance, and grasp of the straw.

7. In taking seed from other districts, it should be the aim of farmers, to get not merely what is sound, but likewise, as far as possible, grain of that variety or sort which is best adapted to their own soils and situations. Many individuals, in 1783 and 1800, sustained great detriment, by getting seed, both of oats and barley, from England and from the continent, the habits of which did not agree with the climate of their farms.

8. One year's age of corn used for seed, is found not to be materially injurious to its future produce; though it may be remarked that, in the opinion of most farmers, what has been kept in the stack is more likely to produce vigorous and abundant plants, than what has been kept in granaries after being threshed—and in the former, it is less liable to mixture of different sorts, than in the latter.

The Society cannot conclude this paper without earnestly warning farmers against an idea which has been sometimes entertained, that weak or inferior corn will do very well for sowing; and therefore, that it is for the interest of the grower to use the best grain for flour or meal. This error was very fatal in many cases to the crops in 1783 and 1800, which succeeded seasons as unfavourable as that of a late year, (1816) when many farmers were led into it from the temptation of a temporary saving; and thus perpetuated, or continued for a considerable time, on their farms, the production of crops that were both small in quantity and of very inferior quality.

On the destruction of the Moth that infests Fruit-Trees.

(Continued from page 112.)

In the spring of 1822 I observed that these insects deposite a part of their ova even in the buds. I found several larvæ emerging from under the strong case which protects the bud. As the blossom shoots up, and gives the insect more room, it comes forward and eats a passage into the centre of the blossom, and there it remains until the whole is destroyed —then it goes to the leaves, and they are sacrificed in their turn.

Nature seems to have given this insect a remarkable property, in order to make provision for any loss that may take place by the severity of the weather, at the time the trees are in blossom. I have observed a new race come forward when the wood-buds begin to expand into foliage. There is another circumstance which, I think, goes to prove what I have now asserted, which is, when a scion or graft, has been put upon a stock, that stock and scion remain in a seemingly dormant state, until the trees have been in blossom and full foliage for some weeks. No larvæ ever shew themselves upon the buds of the scion until they begin to push into foliage, they then appear. Knowing all this to be true, how could liming, peeling, or oiling, be performed with effect, without the risk of the cure being worse than the disease?

I have just one other remark to make, that it is a too common practice amongst gardeners to destroy, without discrimination, the birds which frequent their gardens. This, in my opinion, is bad policy. Although I am aware some of the kinds of birds are great enemies to some crops, it certainly must be a trifling crop indeed, that will not bear the expense of a person to watch it, or a net to protect it, until it is out of danger; thus the gardener preserves the birds to perform a double office—eating up the vermin from the trees, and the seeds of weeds and eggs of insects from the ground. I have often stood and observed the male bird, while the female was sitting upon her eggs or her young, fly to the spot with his bill full of caterpillars to feed his mate or young; and when the young ones become so strong as to accompany their parents in quest of food, it is really astonish-the number of caterpillars they destroy.—I can say, from my own observation, that if it was not the case that the birds destroy a vast number of caterpillars, our trees in general would exhibit nothing but bare stumps, for the insects would become as numerous as the locusts of Spain and America. It is from that circumstance that we find so few flies in comparison of the great quantity of caterpillars. I one day followed a nest of young ox-eyes, which had just flown, in order to see how the old ones acted. I saw them fly from branch to branch, and pick from the curled leaves the caterpillars, with which they flew to their young to feed them.

From these considerations, it is my opinion; that should the gardener, instead of pursuing a system of indiscriminate warfare against the feathered tribe, avail himself of the services of these useful allies, he might, with their exertions, and his own united, soon rid himself of those insects that have hitherto set his efforts at defiance.

On the Utility of Summer-Fallow.

Sir— The art of raising upon the soil grain and other plants, in the greatest possible degree of perfection and abundance, is the chief study of the agriculturist. A natural questions arises, how is this to be done? The answer is short. Put your soil into a state of fertility; keep the crops free from disease; and allow no weeds to rob them of the nourishment which the soil is capable of affording.

The farmer must endeavour to rectify, by art, any natural deficiency that may be in the fertility of the soil. The component parts of fertile soils are understood to be clay, sand, and calcareous earth, mixed in such proportions, that they are neither too close, nor too porous, that is, the sand draining off the moisture in wet weather, and the clay and calcareous earth, by their attraction for water, retaining it in drought. Upon soils of the last description, the plants are neither too much overcharged with moisture in a wet season, nor run the risk of perishing of thirst in a dry one. If to such a soil you add dung, or other decomposed organized matter, the field will then be in the most fertile state possible. Presuming that the soil is such as here described, how are we to prevent diseases from affecting our crops, and robbery being committed upon them by weeds? The best remedy hitherto discovered, is a proper rotation of crops, and fallowing the ground, when necessary, during the summer months.

But to lay down a proper rotation of crops, and to know when fallowing is required, we must have some knowledge of the physical causes which make these operations necessary. This cannot be acquired with studying the nature of the plants which we wish to cultivate, and the diseases to which they are liable.

The Great Author of Nature has so ordered matters, that plants, as well as animals, are liable to diseases at every period of their existence. The curing diseases of animals has long been a principal study with mankind; but the diseases of plants have been little attended to; and when observed to be sickly, the real cause is generally overlooked, and ascribed to want of fertility in the soil.—But this is by no means so frequently the cause of their sickly appearance as is imagined; for plants often fall into decay upon a rich fertile soil; as animals will sometimes contract diseases upon a rich luxuriant pasture. The causes of such decay in plants, are infectious diseases; which diseases may, in a great measure, be prevented, by fallowing, and a proper rotation of crops. The diseases for which this mode of management is an antidote, may be divided into two clasess, those that attack the plants in their stems and leaves, and those that attack the roots.—The former resemble cutaneous disorders in animals,—the latter, diseases in the intestines; the former the most frequent,—the latter the most deadly, and worst to eradicate.

Cutaneous diseases in plants are chiefly occasioned by insects.* Nature has destined every plant to nourish numerous tribes of them. Some insects, in their caterpillar state, are large and easily seen; others are so minute as only to be discovered by the assistance of a good glass. These latter though invisible to the eye, are often so numerous, that they suck the juices out of the plants, so as to occasion disease, and frequently death. To counteract the attacks of these formidable enemies of our crops, we must look into the book of nature for a remedy; and luckily, one presents itself to us. I have mentioned, that every plant is destined to nourish various tribes of insects; but few insects, that generate above ground, can live on a variety of plants. The greater number can only exist on plants of a similar nature. —This natural fact puts these hosts of enemies more under our power, than at first sight they would seem to be, as by a rotation of crops and fallowing, you may keep them so in check, that their attacks will by no means be dangerous. If a field of cabbages, for instance, is infected with the caterpillar of the white butterfly,—if cabbages are continued to be planted on it, the ravagers will increase having plenty of food provided for them; but, sow the field with a crop of grain, and they must all perish, as the fly cannot then find a proper nidus to deposite her eggs upon. It is exactly the same with every other insect, however minute in size. Should your wheat be infected with rust, follow up your rotation with a green crop, upon which the animalcule cannot exist, and you clear the field of the disease.

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* Forsyth on Fruit-Trees.

The natural history of insects is very interesting to the farmer. They propagate mostly from eggs: but classes have been found to bring forth their young in a living state.* Many tribes propagate on animal substances, and are carnivorous; but I do not mean to enter fully into the natural history of insects. I only notice it so far as to show that, whatever their habits of living may be, or however minute in size they may appear, they all possess the power of generating their own species, and that none of them are produced by equivocal generation. It is evident from the nature of these vermin, that a rotatation of a white and green crop alternately, will clear the ground of them most completely by starving them to death in their infancy: and thus the crops may be kept free from all diseases occasioned by insects that are annually or oftener, produced from the egg.

A rotation of crops gives the farmer an opportunity of clearing his fields likewise of all annual weeds. Many of the green crops are raised in greater perfection in drills than otherwise. By carefully hand-weeding and horse-hoeing drilled crops, you may soon get the better of such robbers of your soil, and prevent them from doing injury to your crops in future.

But you cannot clear your fields so easily of such enemies as are not annually produced from the seeds or eggs. The diseases affecting the roots of plants are generally occasioned by insects of this nature. They are generated below ground; and numerous tribes of them live in the state of grubs for years. A rotation of crops has little or no effect upon them, as many of them live equally well upon the roots of a variety of plants. The tribes of insects of this description are numerous; but the natural history of such as are minute, has not been, and probably never will be ascertained. We are, however, acquainted with the nature of some of them. The cockchaffer, it is well known, lives three years under ground, in form of a grub, devouring the roots of every plant that comes in his way. He at last changes into a chrysalis, from which he bursts forth a winged beetle, and is then only able to propagate his kind. It is thought that many of the scarabeous insects have similar natures. A rich loam, of rather a light nature, is the soil most liable to be infested with such vermin; and when they have once gotten possession, they are not easily driven out. A summer-fallow is the best remedy for this evil, hitherto discovered; but it must not be executed in a slovenly maner, otherwise it will do you no good. To have its proper effect, the second furrow should be given in April, and not a weed allowed to be seen upon it for months after. By frequently ploughing and harrowing the soil, you not only give an opportunity for rooks and other birds to pick up the grubs, but you starve them to death for want of food. These vermin cannot be destroyed otherwise than by a summer fallow. Winter ploughing has no effect upon them. During that season, they sink deep into the earth, and lye in a dormant state, requiring no food. As the warmth of summer approaches, they become alive, active, and most voracious.—They then rise near the surface in quest of food; and then, and then only, you have it in your power to destroy them.

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* Dr. Anderson's Recreations.

Let the farmer avail himself of these natural facts; let him endeavour to counteract the workings of nature which are against his operations, by every means that are within his power. He should take every advantage, which a rotation of crops affords him, of destroying weeds and vermin; but when that will not make his fields clean and sound, a summer-fallow should be resorted to. Many plants also infest arable fields that are not annually produced from the seed, but spring from every chip of the roots that may be left in the soil. When a field is much overrun with such plants, the best, and often the cheapest way to get clear of them, is by a complete fallow.

Many errors have been committed in agriculture, by founding theories upon false principles. Were we able to perceive always correctly the manner in which nature operates, we could never go very far wrong; but we often mistake her operations, and imagine that other causes, than the real ones have produced the effects which we observe. We may build theories founded upon such false observations, which shall appear very satisfactory; but they will soon show the false foundation upon which we have built, from the results, when put in pracitce, not answering our expectations. Nature and nature's laws, have been the same since the days of Noah. There is nothing new in her operations under the sun. Mankind have an itching desire after novelty; and often imagine that they have made a new discovery, when, in fact, it was only their own ignorance which makes it new to them. This propensity in mankind to pry into the workings of nature, might be attended with much good, if kept under controul, and nothing admitted by us as facts, but such things as reason assured us came within the grasp of our perceptions. But we too often allow the imagination to lead the way, and impose upon ourselves by building castles in the air. Mr. Tull one of our earliest writers on drill husbandry, was an instance of this. His system of drilling was excellent; his ideas of the component parts of a fertile soil correct; and his theory of the food of plants pretty well-founded; yet, with all this knowledge, he drew very false conclusions. He reasoned, that as a fertile soil will nourish, and bring to perfection a variety of crops equally well, the food of all these plants must be the same, nature giving a power to the seeds of every plant, when they come to germinate, to organize this food in a certain manner peculiar to their individual natures and formation, in the same manner as you may convert grass into beef or mutton, by giving it to cows or sheep, each of these animals being endowed with a power of converting the same food, so as to suit their own particular organs or formation: hence he concluded, that by keeping the lands free from weeds by drilling, the same kind of crop might be raised on the same field annually, as long as he had a mind. A rotation of crops he thought quite unnecessary: but, as nature acts contrary to this theory, it of course fell to the ground.

Since the days of Tull, writers on agriculture have been almost unanimous in recommending a rotation of crops; but differing very much about (what is perhaps of little consequence) the range or course of the rotation. In many of the periodical publications of late on this subject, various rotations have been held up as superior; and much time has been spent to prove, by calculation, the superiority of particular rotations. None, however, have yet appeared so convincingly better than others, as to become the general practice. The truth is, local circumstances of soil, climate and markets, must always influence the farmer in the course to be followed; it is a fortunate thing, that, in such situations, nature will yield a little.—She has bestowed a variety of plants for the use and comfort of man, out of which the farmer may choose various courses of rotations, with equally good effect; thus giving him a choice of cultivating such crops only, as he finds, from experience, pay him best in his situation. The danger is, of recurring too frequently to what is the paying crop with him,—it matters not, whether it is a white or a green one; it cannot be annually produced with equal success; no speculative prospect of greater gain should ever tempt the farmer to depart far from a rotation of a white and a green crop alternately.

Near large towns, land is occupied by men of all professions. Many of them, though men of learning, know very little about country business; and have no idea of any other practice being necessary in any situation, but their own. Such men frequently take it into their heads to write on the subject of husbandry; and, being men of figures, they will run you up the whole course of a rotation, stating the difference clearly in pounds, shillings, and pence, between their practice and that of the country farmers.—It must be owned, that the balance struck in favour of city farming, is often very great; and I have no reason to doubt, nor do I mean to contradict, the accuracy of such statements. But it is strange, that if farmers might make fortunes by the means which these writers point out so clearly, they do not all immediately set about it. They appear to be possessed with the same degree of folly, which a certain brickmaker discovered in the farmers near London. This man had a small patch of ground near the city, from which he rapidly made a fortune, by burning it into bricks, and building houses with them. This worthy citizen took a jaunt into the country; but how was he shocked at the folly, ignorance, and stupidity of the country people, who kept large fields in corn and grass, which, in his opinion, could pay but little. "*How easily,*" exclaimed the brickmaker, "*might all these make fortunes, by burning their fields into bricks, and building houses with them!*" This brickmaker, it is presumed, would make but few proselytes.—But when men of abilities, with only a partial knowledge of the art, take it into their heads to write upon agriculture, they sometimes set off their theories in such a plausible manner, as induces the unwary and unskilful to adopt their plans in situations not calculated for such modes of culture: the consequence is, disappointment and loss. With some of these theorists, green crops and drilling, are the magic wand for filling the coffers of the farmer. Fallowing is accounted, not only useless, but pernicious; as by their accounts, better crops may be raised without it.[*] What a temptation is this for the novice to banish fallow from his practice altogether, though his fields may be in a state that loudly calls for it. I am far from saying, that fallow should be universally banished. Let the natural causes be attended to which make it necessary; and if nature demands that it should occasionally enter into the system of husbandry, let her demands be complied with. It is a real loss to fallow a friable soil that is free from weeds and vermin; but it is often a greater loss to continue cropping such lands, when the crops are annually diseased. The effects of such diseases are often not perceptible on the bulk of the crop. It may, upon a rich soil, be pushed on to the natural size of the plants; but if they have been sickly for any length of time, the seeds will not be well perfected, and will be deficient in quantity and quality.—*(To be continued.)*

Flax Premiums—Wednesday 25th Feb. 1825.

1st Premium of 2*l.* 10*s.* to Mr James Henderson, Parish of Glendermot, scutched at Farm-hill mill —2d do. of 2*l.* to Mr Robert M'Farland, All-Saints, scutched at Cloon mill.—3d do of 1*l.* 10*s.* to Mr Michael Gallagher, Killea, scutched at Carrigans mill —4th do. of 1*l.* to John Montgomery, Rye, scutched at Rye mill.—5th do. of 1*l.* to Mr W. Elliott, Taughboyne, scutched at Carrigans mill.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt*
Oats	...	0	10	–	1	0	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3	–	0	5	*pr lb.*
Mutton	...	0	3	–	0	5	
Veal	...	0	6	–	0	10	
Flax undressed		40	0	–	55	6	*pr cw*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	50	0	–	60	0	*pr cwt.*
Pork	..	42	0	–	45	0	*pr cwt.*

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. HEMPTON.

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[*] Dutton's Observations upon Archer's Survey of the County of Dublin.

N. W. SOCIETY'S MAGAZINE.

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Of Moss or Bog alone as Manure.

Moss-earth will, without any preparation whatever, operate as a manure to any other soil, in the same way that one sterile earth tends to enrich another. Moss-earth will help to mend the mechanical arrangement of any of the other soils; which is frequently their greatest defect. The extreme cohesiveness of clay is often a bar to its improvement: pure sand is unproductive from a contrary cause. If these are mixed with each other, or if moss-earth is mixed with either, they will be cured of these defects. The tenacious clay will be rendered more open; the moisture will more easily percolate; a greater scope will be given to the roots of plants; the clay will not be so retentive of moisture in wet weather, nor so adhesive when dry.

A mixture of moss among sand would deepen the soil, render it more retentive of moisture, and prevent the crop from being so readily injured by the drought.

If the clay lay in an elevated situation, and was extremely sterile and moist, moss-earth, in its natural state, would only form a mixture as soil; but the heat and fermentation under such circumstances would not be sufficient to accelerate its decomposition. But if mixed with a sandy or gravelly soil in a low situation, the moss-earth would have more powerful effects. It would not only mend the mechanical arrangement of the soil, but the heat of the sand, and more free access to air, would greatly accelerate the putrefaction and decomposition of moss-earth; and, as putrefaction proceeded, the food of vegetation would be supplied. But it is much better to bring the moss into a course of putridity by some fermenting admixture before it is applied to any soil. If no such mixture can be procured, let the moss-earth be thrown up in heaps, first exposed to the frost, and then to the changes of weather for a year or two; and if it is turned over, some sand or clay mixed with it, and the whole exposed for two seasons to the weather, it will form a tolerable manure. But, in an age so enlightened as the present, it might well be expected that some more powerful dissolvent of moss-earth might be discovered.

Of Moss formed into Manure by being mixed with Lime.—If moss-earth is minutely mixed with newly slacked lime, in a powdery state, and laid up in a heap for a few months and once or twice turned over, well broken, and a little new lime thrown in when turned over, the antiseptic qualities of the moss, in the course of a year or so after being so mixed, will be overcome, and the moss brought into a state of rapid decomposition, and thereby formed into as good manure as so much straw, or other vegetables, that had been taken from the arable lands.

The best way to prepare it with lime is, to dig up the moss, and throw it into heaps after harvest, or early in winter, so that the frost may operate on the moss, and in part reduce its texture, before the drought forms it into peat. When dug up and exposed to summer drought, before the frost has loosened its adhesion, it becomes a real peat, and will not be again so easily broken down by the weather: But if it is exposed first to frost, the alternate changes of weather will soon reduce it from peat to earth:—the drought, after the frost, will not form it into peat; but, with the other changes of weather, it will aid in reducing the organic texture of the moss.

After being exposed to the weather for a whole winter, the moss-earth may be removed in the spring to the field to which it is intended to be applied, and, when it is between wet and dry, thrown up into a convenient midden, and mixed with about a fifth or sixth part of its weight of hot newly slacked lime in a powdery state. The moss should be as much broken as possible, and minutely mixed with the lime.

Lord Dundonald in his Treatise on the Connexion between Chemistry and Agriculture, observes, that when the newly calcined lime, or what is usually termed lime shells, are mixed, unslacked, with the moss, the heat is so much increased as to reduce the moss to charcoal or cinder, and to dissipate its component parts into a gaseous state, leaving no thing but the ashes or carbonaceous matter, and such a portion of the fixed air generated in the process, as is absorbed by the lime returning to the state of chalk. The moss ought not therefore to be mixed with lime in the state of shells.

'The object is best attained by mixing newly made and completly slacked lime, with about five or six times its weight of peat, which should be moderately humid, and not in a too dry state. In this case, the heat generated will be moderate, and never sufficient to convert the peat into carbonaceous matter, or to throw off, in the state of fixable air, the acids therein contained. The gases thus generated will be inflammable and phlogisticated air, forming volatile alkali, which will combine as it is formed with the oxygenated part of the peat that remains unacted upon by the lime applied for this especial purpose in a small proportion. By this mode of conducting the process, a soluble saline matter will be procured, consisting of phosphat and oxylat of ammonia, whose beneficial effects on vegetation have already been described.

'Inattention or ignorance of these important facts, has probably, in many cases, defeated the wishes of the farmer in the application of this preparation, which is particularly recommended as a top-dressing to the grounds under pasture. The proportion of lime to peat here given, should be carefully attended to; and the mixing of the two substances together should be performed under cover, in a shed or out-house constructed for that purpose; as too much rain, or a too great exposure to air, will prevent a due action of the lime upon the peat. The success of most operations, but more especially of those of a chemical nature, greatly depends upon a regular and due observance of circumstances apparently trivial.

'This preparation of lime and peat, is in a peculiar manner conducive to the growth of clover, and of the short, and, as they are called, sweet kinds of pasture grasses.—The soil also, by the application of it, acquires such a predisposing tendency to promote the growth of such grasses, as to prevent its growing afterwards rank, coarse, or sour herbage.'

The compost of moss-earth thus made up with lime, ought to remain several months in that state; after which it ought to be turned over, well mixed and broken; some fresh lime, and if possible, a small quantity of earth, or even some little dung applied; and having remained a few months more in the midden, it may be used as manure, either as a top-dressing or otherwise. It should remain a year at least in the midden with the lime; but the longer it remains in that state, the oftener it is turned over, and the more lime, earth, dung, or other admixtures that are applied, the richer will be the manure.—Whenever green herbage of any kind can be obtained, it ought to be mixed in the midden when turned over.

But the utility of moss-earth mixed with lime for manure has been doubted by some who, I should have supposed, were well qualified to judge of its value. A learned Senator of the College of Justice, Lord Meadowbank, whose researches in chemistry and agriculture have been unremitting, in an Essay published in the second volume of the Transactions of the Highland Society, page 150, says, 'Peat prepared with lime alone, has not been found to answer as a good manure. In one instance, viz. in a bit of fallow sown with wheat, it was evidently pernicious.'

Dr. Walker, in the Essay formerly mentioned, seems to doubt of the utility of moss as a manure, when prepared with lime. He says, (p. 55,) 'When lime or any other calcareous manures are intermixed with peat, they may, by encountering the acid in the peat, occasion effervescence, by which the substance of the peat may be more minutely divided, and impregnated with neutralized and fertilizing matter. But these manures, though capable of effervescence, are themselves incapable of putrefaction, or of communicating that process to peat, or any other substance that is not susceptible of it. Accordingly, peat-earth, and lime both in its mild and caustic state, were mixed in various proportions; some of these mixtures were exposed to the air for one, and others for two years, yet no degree of putrefaction on the earth could be discerned; for though peat consists chiefly of vegetable matter, yet it is in such a state as to resist the septic powers of lime.'

When gentlemen so eminent in science, and so much conversant in agriculture, as the learned Judge and respectable Professor, have decided, it may appear presumptuous in me, confessedly ignorant of chemistry, to offer my opinion. But with all deference to the memory of the one, and the high respect I entertain for the other, I am bound to say that both of them seem to me to have mistaken the effects of lime and moss-earth as manure. That it may fail in some instances, cannot be doubted. The cause of failure in the instance recorded by his Lordship, I shall not attempt to explain. But that it has been used with effect in many hundreds of instances I have seen and known, both before and since I published on that subject; and that it still continues to be so used, by many who have had long experience of its effects as a manure, are facts which I know, and can well attest. Having seen the opinions of these respectable and intelligent authors on that subject, I have, in the course of my extensive peregrinations in Scotland and England, made particular inquiry into that matter, and I find that moss-earth, prepared with lime alone, has been used, and continues to be used, as a manure, with success, in many parts of both kingdoms. I would be cautious of receiving the stories of country people, in contradiction to well known principles of science. But, in a matter of this kind, I am disposed to give credit to the well attested facts of many who have made the experiment, though some men of extensive erudition may think these experiments inconsistent with some of the general principles of science.

Lord Meadowbank does not indeed advance any argument founded on science against mixing lime with moss; but only says, moss so prepared was not found to be a good manure, and in one instance it proved injurious. But this might proceed from some peculiar quality in the soil, or some local or relative circumstances not attended to.

Dr. Walker, indeed, opposes both theory and practice to the use of moss prepared with lime for manure; but it remains to be inquired into, whether he is correct in his theories and experiments. He admits, in the passage quoted, that when peat is mixed with lime, the calcareous matter encounters the acid in the peat; occasions effervescence, which divides the substance of the peat, and impregnates it with neutralized and fertilizing matter. Here the Professor not only admits the very fact I wish to establish, but explains the scientific process by which moss mixed with lime is formed into manure. But then adds, that this species of manure is incapable of putrefaction, or of communicating that process to subjects incapable of fermentation; and says, moss is in such a state as to resist the septic powers of lime; if so, it can do no good as manure; for it is only as putrefaction advances, that the food of plants is formed, or set at liberty from dead vegetable matter.

It may seem to be bold for me to presume to dispute the opinions of the respectable and intelligent Professor of Natural History.—But every one who has paid the least attention to these matters knows, that, when hot lime, or any calcareous manure is mixed with moss, or any substance abounding with acid, the alkali in the lime encounters the acid in the moss, raises heat, fermentation, and effervescence, which destroy both the alkali and the acid; neither of which are favourable to the growth of plants, and forms them into a neutral salt, which is propitious to their growth. By the acid being destroyed or neutralized, the antiseptic quality of the moss is removed, the fibre and texture of the moss-earth broken, and it is thereby brought into a state of solubility, and converted into manure. The whole mass of moss-earth is entirely composed of vegetable matter that had grown on the surface, and is suspended, by its antiseptic quality, from complete dissolution. But the moment that antiseptic and insoluble quality is overcome, the whole body of moss-earth is as fit for manure as so much hay, straw, or grass. The charm of insolubility once broken, and putrefaction begun, it will continue its course till every particle of the moss is reduced; and, as it advances, the food of plants will be formed, and yielded up to the soil. Dr. Walker himself admits the powers of calcareous earths, in promoting the putrefaction of vegetable substances. He says, in his Prize Essay, p. 24, 'Calcareous earth is well known to promote the putrefaction of vegetable and animal substances. The Island of Lismore is, for the most part, composed of limestone; all its mosses are much intermixed with calcareous earth; they are therefore the most putrid, and most consumed of any that are to be seen.' The same effects will follow every where; and if moss be rendered sufficiently putrid, it will prove the best of manure.

That caustic lime will operate upon moss, in every state in which we find it, is evident from the effects it has upon other soils.—When land has been often manured with dung, part of the vegetable matter, both of the dung, and that in the soil, becomes insoluble, and yields no food for vegetation.—Hence we often find abundance of vegetable matter in the soil reduced entirely to earth; yet so insoluble as to be of no manner of use to vegetation. What is the remedy in this case?—Hot lime most undoubtedly. The caustic lime, when applied to land in that state, reduces the insolubility of the vegetable substance, and forces its dormant powers into action. In this case, the putrefaction of the vegetable matter has proceeded much farther than it has done on moss. Nothing of the vegetable fibre or texture of the plant remains; nor is even a black unmixed earth to be found there, as in moss. Nothing remains of the vegetable substance that is perceptible to the eye; yet enough will be found of the insoluble vegetable matter for the caustic lime to act upon. And such are the powers of hot lime, in reducing even these imperceptible remains of vegetable substances, that the most luxuriant crops of grain are always produced when hot lime is applied to such a soil. It would be strange, indeed, if lime, in a caustic state, had such powerful effects on vegetable matter, so far advanced in putrefaction, and yet had no such powers upon moss where putrefaction had not made such progress. If it were admitted, that hot lime had no such effects on moss, the reason must be very different from that assigned by Dr. Walker: but, fortunately for mankind, he is not correct in that opinion.

Besides the Earl of Dundonald, I might also have quoted, on this subject, Dr. Garnet and others, the best qualified to judge on scientific principles. The intelligent Mr. Naismith (p. 43) says—'We know, in general, that it is the property of quick lime to decompose most vegetable substances; and I am certain, from experience, that one part o lime newly slacked into a mild powder, mixed with five or six parts of moist peat, an the whole repeatedly turned and broken, before the lime becomes effete, falls into a fin friable mould; and that this mould, applie to any other soil, greatly promotes fertility.'

I might have noticed the error into which Dr. Walker has fallen, in admitting, as he does, the powers of lime to neutralize the acid in moss, and minutely divide its parts, and yet doubting its powers of promoting putrefaction, even when exposed to the open air for one or two years. I can say, that I never saw moss-earth taken from the common mass, and laid out and exposed to the open air for two years, even when no admixture whatever was applied, but I found putrefaction had made considerable advances.—When lime, or any caustic substance which acts powerfully in dissolving moist vegetable matter, is applied, the progress of putrefaction must be greatly accelerated.

Though I cannot help being diffident when I differ from Gentlemen so eminently qualified to judge, and would wish to treat their opinions with all manner of respect; yet, in the present case, I am fully satisfied in my own mind, that moss-earth, in general, may be converted into efficient manure by an admixture of lime. That opinion is founded upon the little knowledge I possess of science: it is corroborated by the concurring opinion of others more conversant in science than I can pretend to be; and it is confirmed by an experience of more than thirty years, under my own observation, as well as that of hundreds of others whom I could point out, who have, for several years past, used it with such success, as to induce them to continue the practice; and who are convinced, from well tried experience, that moss mixed with lime is highly beneficial as manure.

AITON.

The subject of the above article has been before introduced in our work. The proper management of Bog for manure is of vast importance to Irish farmers. Great exertions are sometimes made, but want of skill prevents the poor man from attaining his object. Mr. Aiton's directions shall be continued in a future number. They are most useful, and will repay him who applies them.

On the Utility of Summer-Fallow.

(Continued from page 120.)

Fallowing the ground, as well as a rotation of crops, is of very great antiquity; and wherever agriculture has been studied as an art, they must have been discovered to have been of importance. We are made acquainted with the practice of agriculture amongst the Romans, from some of their writers.—They founded their whole prospects of abundance upon fallowing, and a rotation of crops.* The Egyptians, at a much earlier period than the Romans, practised agriculture as an art. Irrigation was well known to them, and carried on as a national concern, upon a large scale. They made the river Nile subservient to them; and, at a period, when the great body of mankind were wandering solitary hunters, or pitching their tents as herdsmen, that people had brought agriculture to a great degree of perfection, and raised corn in abundance.† Whether they followed a rotation of crops or not, cannot now be known; but I think it evident, that they fallowed their land, such as could not be irrigated at least, once in seven years; as *Moses, who was skilled in all the learning of the Egyptians*, imposed upon the *rude* tribes of Israel, whom he relieved from being the slaves of their more learned masters, a law, that their lands should lye fallow, or have a jubilee every seventh year. Let us not carelessly pass over these hints which we have from the ancients.—Those men had the book of nature lying open before them as well as we have, and many of them were as capable of reading in it as we are. I am far from approving of the system laid down by Moses, as fallowing at a certain stated period may not be necessary. It should be left to the skilful and practical farmer to judge when a field requires the operation of fallowing, as we leave it with the skilful practical physician to say when phlebotomy is necessary for a patient. But though the system of Moses may now be condemned, it cercertainly was the best that could be devised for such a people as he led out of the land of Egypt. He knew them to be rude, and ignorant of all the arts. He was afraid that a people so totally ignorant of agriculture as they were, would, when they came into possession of cultivated fields, run them out with overcropping; therefore, promulgated this law as the only means in his power to prevent such deterioration.

In many parts of the united kingdoms of Britain and Ireland, we have systems enforced similar to this law of the Jews, not indeed by the express law of the realm, but by proprietors of lands binding their tenants, by their leases, to fallow their field at certain stated periods, generally making the jubilee return oftener than Moses enjoined. When the bulk of farmers are ignorant of the arts, restrictions as to fallowing, and a rotation of crops throughout the lease, may be attended with benefit; and the farmer may, by acting under such restrictions, raise better crops, and reap more profit, than if left to the freedom of his own will. But as a knowledge of the art becomes general, such restrictions are often grievous fetters. At best, they only prevent the ignorant from going very far astray; but they often prevent the farmer from following the right path which fortunate circumstances may have pointed out to him.—Though a rotation may preserve crops free from cutaneous disorders, yet various rotations may be followed with equal success; and he may be bound by his lease to follow one, which from local circumstances, does not pay him so well as another would do. Fallow is a powerful remedy for destroying all root weeds and grubs; but he may be bound to use this expensive medicine oftener than nature requires, or has any occasion for. No intelligent farmer ought to be bound down by such fetters.

But plants are liable to disease, and fall into decay, from causes over which a rotation of crops, or fallow, have no influence. The soil, or climate, may afford too much, or too little moisture, or it may be impregnated with mineral substances hurtful to vegetation.—The situation may be too much exposed to wind and storms, or it may be too much sheltered, to allow a free circulation. To rectify such defect in soil or situation, is very foreign to the present subject. But I must observe, that plants, improperly nourished or sheltered will be more hurt, should vermin attack them, and sooner fall a prey to their ravages, than plants differently situated.

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* Virgil's Georgics.

† Irrigation, where it can be effected, is an excellent remedy for destroying all vermin which prey upon the roots of plants. Dr. Anderson, in his Recreations, mentions a field much infested with grubs, being completely cleared of them, by an extraordinary wet season. The soil lay upon a retentive bottom; the continued rains raised the water upon this bottom to a greater height than usual; by which means the grubs were all drowned in their winter quarters. Quicklime, laid on fallow, has a powerful effect in destroying vermin and root weeds. But these things do not come within my present plan, which is, merely to notice the effects which fallowing and a rotation have upon the health of our crops.

But there is one disease to which our white crops are liable, which neither situation, fertility of soil, fallowing, nor a rotation of crops, seem to have much influence upon.—By fallowing, and a rotation of crops, you may keep the fields free of the disease; but if you sow impure seed, you will infallibly have smut. This disease long baffled the skill of the agriculturist; and though chance discovered a cure, yet the cause of the disorder is still doubtful. Much has been said and written on the subject; some asserting it to be occasioned by minute insects or animalcules; others affirming, that no living creatures are to be found upon smutted plants, but such as, at same time, may be found upon sound ones in the same field. Sir Joseph Banks has described the cause of the disease to be minute parasitical plants, preying upon the wheat. It is highly probable that future observations may confirm this opinion. But whether the destroyer is a minute insect, or parasitical plant, the seeds by which it is propagated must be too small, ever to be observed by us, even with the assistance of the best glasses. But we know enough of the disease from its effects, to dread its attacks.—We know that it is infectious, as smutted seed will increase the disorder in the next crop. There is reason to think, that all infectious diseases are able to propagate themselves, else how could they be infectious? But some diseases are more alive, and more easily wafted from one place to another, by the wind, than others. It appears, however, that this disease is not far spread by the influence of the air, as one ridge may be smutted by sowing impure seed, when the immediately adjoining ridge shall remain free from the disorder. In this respect it resembles some very inveterate diseases which attack animals.—They are never carried by the air, but must be brought into contact by some other means before they can lay hold on a new subject.—When the poison of such diseases is lodged on the skin, it may frequently be washed off with water alone; and even when lodged in, or under the skin, as in the bites or stings of reptiles, if caustic is applied to the wound before the poison has entered the system by mixing with the fluids, it may kill the disease in it its birth. I believe surgeons will allow, that the virulent matter of the small-pox may be extracted or destroyed in this manner from the wound made by inoculation, although it may have remained for some time under the skin. Smut, in wheat, seems to be a disease of this nature. You may free the seed grain from the infection by washing it in the salt water, and drying it with quicklime. The lime, in that state, acting as caustic, kills the seeds of the disease. The grain may have remained for months covered with the infection; but the disease cannot operate till the grain begins to show life. As soon as that takes place, or very soon after the plant has developed itself, does the poison lay hold on the seminal parts of it, and so vitiates its juices as to render it unfit to perfect its seed, or propagate its kind. Any one may be convinced that the disease begins at a very early period of the plant's existence, by dissecting a diseased plant, as early as its formation can be clearly traced, when these parts will always be found defective.

But, luckily for agriculture, chance discovered a remedy for this deadly disease.—Tull relates the circumstance which led to the discovery. A ship laden with wheat was stranded; the cargo was saved, but completely wet; it was offered for sale at an under price. Some farmers ventured to sow a little of it—a few days soon showed the grain vegetated. As it was sold much below market price, the farmers soon bought it all up for seed; but it was so completely wet, and stuck so much together, that, in order to make it separate in sowing, they mixed it with quicklime as the likeliest thing to dry it. Smut was very prevalent in the country, but, to the surprise of every one, not one head of smut appeared where this seed was used. From this accidental discovery, pickling to cure the smut in wheat has been practised ever since, and found to answer the end. Stale urine was afterwards found to be a more powerful remedy than salt water, but it is attended with some danger; for, if the grain is not immediately sown, it runs the risk of being deprived of vegetative life, and rendered totally unfit for seed. I have only noticed smut in wheat; but it attacks oats and barley also. It is likely that pickling might also cure these crops of smut: the loss in them, as to quantity, is often as great as in wheat; but what remains is of equal value at market as if no smut had grown in the crop; whereas, wheat that is smutted always sells at an undervalue. If farmers, by pickling, could procure sound crops of oatsand barley, it would amply reay them for their trouble.

Accidental practice, or circumstances, have often made discoveries in the arts, which otherwise would have remained longer secret; but when chance has made the discovery, it is of importance for us to trace out the true cause of the phenomenon. The cause of this disease is still a little doubtful, and may continue to be so, as the infection may be communicated to the plant in a manner as invisible to our senses as some infectious diseases are communicated to the glands of animals. —We see the diseased seeds of the plant and the diseased gland of the animal, but the causes which produce these disorders, are by far too minute for our organs to discover.

Fallowing, and rotation of crops, have been observed by many farmers to be beneficial, who never thought of inquiring into the cause of their usefulness. Had farmers continued unconcerned about these causes, their practice must often have been in error; but they could not have been much further astray, than when acting upon assumed imaginary causes, which probably exist no where in nature but in some wild imagination.—Men find it more easy and pleasant to solve every natural appearance by the workings of fancy, than to bring the subject under cognizance of their senses. By the help of imagination, a person may sit in his closet and account to himself in the most satisfactory manner, for the causes of the most curious and minute operations of nature. But to investigate the matter, so as to be satisfied from the testimony of his own senses that the thing is really true, a person must attend to minute objects, in some cases, for years, before he can pronounce with certainty on the subject. Unluckily for agriculture, the natural causes which render fallowing necessary were accounted for without due examination. The jubilee was a year of rest unto the weary soil. Men were sensible, from their own feelings, that animals required rest after hard exercise: imagination suggested that the soil also must require rest after a course of cropping. Nothing can more clearly show how prevalent this opinion has been amongst farmers, than the common phrases of recruiting a worn-out, or run-out soil, by resting, or fallowing. The idea that lands are restored to fertility by rest, is a very common, but very erroneous one; but many farmers fallow their land upon this principle. Having the idea that rest is the chief thing which their tired soil requires, they pay little attention to have the weeds and vermin extirpated by the fallow. Acting upon such false theory, has brought fallowing into disrepute, with some; but experience has proved, and it may be proved by any one who chooses to try it, that it is not rest alone which the soil requires; for, if it is free of root weeds and vermin, you may, with a very little dung, raise a good drilled green crop upon this soil, so much exhausted and fatigued with carrying white ones; and it will be found to show equal, if not more vigour in bearing next white crop, than if it had been rested by an ill executed fallow. It is evident, that every practice founded upon such false theory must lead to error.

The idea that green crops have a fertilizing quality which they impart to the soil, is held by many persons. I cannot contradict it; but I must say, that of all the reasoning which I have heard or read upon the subject, none of it brings conviction to my mind that these plants are possessed of any such qualities. It is not impossible—it is even probable that they are possessed of these qualities; but I have no evidence to convince my senses that these are facts in nature: and therefore must remain in doubt. Until this is ascertained, we may, by practising upon these ideas, be pursuing a system as completely wrong with regard to green crops, as those who fallow their lands under the notion of their requiring rest.

There is a deficiency at present, in the theory of agriculture, which every one must feel who wishes to study it scientifically. In the operative part we have made great progress; but for this we are much indebted to some of the other arts. By the mechanical powers, we can determine which form of a carriage is best for our purpose: and from mathematical principles, we can construct a plough that shall cut the furrow of any breadth and thickness required, and turn it so as to leave it inclined at any angle we choose. This part of the business is well understood by many, though far from being so generally known as it ought to be; but the reasons given by many operative farmers, why a certain mode of culture is preferred by them, are often very unsatisfactory; and, not unfrequently, whimsical causes are assigned that do not exist in nature. B.

FARMING SOCIETY OF IRELAND

DISTRICT PLOUGHING MATCH.

1 To the person who shall plough half a rood of ground in the best manner with one pair of horses, mules, bulls, oxen, or heifers in reins, within 2½ hours, *A Silver Cup.*
To the next best do. do. *An Iron Plough and Silver Medal.*
2 To the Ploughman who shall plough best, £3
To the next best ditto, 2
3 To the Farmer holding his own plough, or having it held by his son, or if the widow of a farmer, having it held by her son, who shall plough half a rood of ground in the best manner, with one pair of horses, mules, bulls, oxen, or heifers, in reins, within 2½ hours, 5
To the next best ditto, 3
4 To each of the five best of the unsuccessful candidates in class 3, provided they shall have ploughed well, with the improved plough and their own cattle, £2 each 10

N. B. Claimants in class three, at more than ten miles from the plough-field, will be allowed one shilling per mile, for each mile beyond ten that they shall send, provided the ploughing be decidedly good, and not otherwise.

Conditions.—Candidates in class 3 may come in competition with candidates in class one, and should they be successful there, will be entitled to the prizes in *both* classes respectively.

The object of this condition is to secure to the working farmers the prizes in their own class, at all events, and to encourage them by throwing open those in the other class, to give them the chance of double premiums, should they have merit and skill to obtain them. But to be entitled to the prize in class one, they must perform the work in the time limited for that class.

N. B. Any candidate shall be disqualified, whose sod is settled by any means except the plough or foot of the ploughman, as the plough works, or who suffers any assistance as to the poles, setting of irons, or otherwise to be given to the ploughman.

The Farming Society of Ireland District Ploughing Match will be held on Thursday the 24th of March, 1825, at Granshaw, at 12 o'clock. All ploughs must be entered with the Secretary of the N. W. Society, on or before Saturday the 19th March, and be in the field on the day of ploughing, at 10 o'clock. The General Committee will meet on the 24th, at 2 o'clock; and such members of the N. W. Society as wish to dine together on that day, will leave their names at the King's Arms, on Wednesday, the 23d, before 12 o'clock.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt.*
Oats	...	0	10	–	1	0	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3	–	0	5	*pr lb.*
Mutton	...	0	3	–	0	5	
Veal	...	6	6	–	0	10	
Flax undressed		40	0	–	55	6	*pr cwt*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	50	0	–	60	0	*pr cwt.*
Pork	...	42	0	–	45	0	*pr cwt.*

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N. W. of Ireland Society by Moss. Hempton, by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms.

N. W. SOCIETY'S MAGAZINE.

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GRASS LAND.

The following descriptions of land may be ranked under this head.

1st. Such as are situated near large populous towns, where manure is cheap and plentiful and where the produce of grass-land is constantly on demand, and of course dear.

2d. Such lands as are placed on the banks of rivers, and brooks, that may be improved by irrigation to a much higher value, than can possibly be done under any other sort of cultivation.

3d. Such lands as lie in vallies of mountainous countries, especially chalky soils, where old meadow-land is scarce and valuable, and most of the arable land of such a quality, that it cannot be made good sward-land.—And

4th. All such cold strong ground of the grass kind, which if ploughed up, would not be applicable to turnip husbandry, or the purposes of modern farming, and which under the best practice would not be so valuable as they are at present in the condition of sward.

It has been remarked that the great difficulty is to discriminate what sort of land is suitable for grass, and what improper. The best meadow-land does not make the best tillage-land, nor does the best arable-land always make the best pasture but frequently the reverse. To make this discrimination, it is necessary to consider well the process of nature. The great object of nature is to perpetuate all her species ; but upon the plants created for the support of animals intended for the food and use of man, she seems to have bestowed more than ordinary care. Plants having no locomotive motion have the power of propagating in two different ways. In trees and shrubs and many kinds of plants, the assistance of man is required to obtain viviparous production, by grafting, budding &c.—But in grasses nature does her own work and that in both modes. We have only to attend to her examples and we shall seldom err. In trees and shrubs, the bud is the viviparous production ; in grasses the root performs the same office. Grasses are as much the offspring of roots, as of seeds. Every new root contains the germ of a future plant ; and as the seed-stalks of grasses must necessarily be frequently cropped by animals, this is compensated by the increase of the roots. Most of the best grasses are in their nature biennial ; but the power of propagation by the root makes them in effect perennial. But this process fails unless in land peculiarly adapted for grasses. No land will it is conceived make a good meadow, unless it is deep enough to admit the roots of grasses to run down out of the reach of the summer's heat, and retentive enough to hold water just so long as to produce fermentation, with a subsoil so open as to drain it off before putrefaction takes place.

It is of much consequence to keep grass lands as clean as possible from the growth of all sorts of coarse plants, those of the aquatic kind being removed by suitable drainage, and the application of absorbent manures.—They should likewise be carefully removed from the hedge-rows every year, and thus prevented from spreading by their seeds. A practice which would also be of great benefit to the hedge-plants. Such lands also should be kept clear of all kinds of obstacles that would prevent a perfect sward, such as the growth of mosses, droppings of cattle, as well as sticks, stones and other similar substances.

Harrowing in order to destroy fog or moss does not succeed without other precautions. Manure should be laid on at the same time : even without harrowing ashes spread on the ground destroy the moss, and greatly improve the grass. Much advantage also has been derived from scattering fine sand over the sward, in an evenly manner but not too thickly. The dung of animals should always be beaten small and dispersed over the surface ; otherwise the grass comes up in coarse tufts which are rejected by cattle by which much injury is sustained.

Upon stiff yellow clays the practice of draining off the surface-water has been found useful. Dressing a cold tenacious clay not previously drained is an absurd waste of time, labour, money and every thing most valuable. Having obtained a tolerably dry surface, the next object is to deepen the staple of the soil. This is best done by laying on every kind of compost, for two or three years together which produces a better sort of grass than dressing the surface once in the three years.

Whether it be preferable to feed the first year after the seeds are sown, or to mow the grass depends on the nature of the soil and the object of the farmer. Some consider it improper to allow even the foot of a sheep to enter a field so laid down, the first year.—The tracks of animals cause water to lodge on the surface, and injure the grass both in quantity and quality; for sheep or cattle press a clay soil so close, that the water cannot penetrate the ground. But by shutting up the field, and suffering the grass to shed its seeds, you may expect the following season (by giving only a slight dressing) to cut a good crop of hay from it.

In cases of old worn out thin patches, or mossy grass-lands, the practice of scarifying or cutting the surface sward in different directions, has been recommended as very useful, especially where they are afterwards manured, and grass-seeds sown on the thin parts. Pasture-land would also be improved by the same method. The best time for doing it is from the middle of February to the middle of April. In general dressing the land one way is sufficient; but if the sward be very mossy or stiff, it should be dressed length and cross-ways, cleaned and then rolled.

(To be continued.)

Of Moss formed into Manure by being fermented with Dung.

(From the Scotch Farmers' Magazine.)

This is, of all others yet known, the most proper and effectual method of converting moss-earth into manure. When dung, in its most powerful stages of fermentation, is mixed with moss, the fermenting and putrefying qualities of the former are readily communicated to the latter, and bring on a degree of heat, which dissolves the acid in the moss, reduces its antiseptic qualities, and brings it into a state of putrefaction; which being once begun, continues, till it ultimately dissolves the organic texture of the moss, sets at liberty the vegetable matter and other substances of which it was composed, & reduces the whole compost to be the food of plants.

Some persons had, many years ago, mixed moss with dung; but Lord Meadowbank was the first who investigated and ascertained, on scientific principles, the immense value of that species of manure.

After many experiments, during the course of six years, his Lordship found, that by mixing a quantity of fermenting dung with a certain proportion of moss-earth, in the form of a compost midden, the fermenting qualities of the dung were communicated to the moss. Heat, sufficient to reduce the insolubility of the acid and tan, and to render the whole mass soluble, was raised: the fermenting acid and putrefying qualities of the dung were thereby communicated to the moss-earth, and the whole heap was thereby formed into valuable manure. Having made these important discoveries, and proved their utility by the test of experience, his Lordship, with his usual degree of patriotism and public spirit communicated the results to the public in a pamphlet which he distributed gratis.

As that pamphlet has been often reprinted, and the substance of it given in your Magazine, it would be superfluous to copy it here; and I shall merely repeat the substance of his Lordship's directions for forming this species of manure. The moss to be used may be taken either from the top or bottom of the strata, as may be most convenient; only the turfy parts, his Lordship thinks ought to be laid aside, and that which is fittest for fuel preferred. It ought to be thrown out from the pit for a few weeks, till it be divested of some part of its moisture; and I am humbly of opinion, that its being exposed to the weather, especially to frost, would be found beneficial in reducing its tenacity.—After it is dried a little, it may be carried to the field to which it is to be applied, and mixed into a compost midden with the dung.

The quantity of materials to be used, his Lordship thinks, ought to be one ton of dung to three tons of moss. With submission to his Lordship, however, I am humbly of opinion, that the proportion of the materials ought to be regulated by the state in which they are when mixed. If the moss used is taken from a patch of low meadow, formed by some spring, but occasionally overflooded with water from the cultivated lands, the moss will contain such a mixture of other earth as renders it brittle, inadheisive, and unfit for fuel; and in that ease putrefaction will be much easier excited in such moss, than in that which has been formed in a more elevated situation, and is altogether free of extraneous matter. On the other hand, some species of dung are much more disposed to putrefaction than others. Horses' dung will more powerfully excite fermentation than that of cows; new dung will more readily ferment than that which is old and rotten; town dung will excite fermentation more powerfully than ordinary farm dung.

For these reasons, I would recommend the strictest attention to the quality of both the moss and dung, at the time they are put together. If the moss contains extraneous admixtures, or is much disposed to yield to putrefaction, and if the dung mixed with it be rich town dung, three tons of moss may be mixed with every one of such dung. But if the moss is of the most insoluble quality, free of admixtnre, and not long exposed to the weather, and ordinary farm-yard dung is used, it will be proper to apply at least two tons dung to every five tons of moss: and if cow dung only be used, I would recommend to mix it and the moss in equal proportions.

The first stratum ought to be moss, about six inches thick, succeeded by dung ten inches, moss six, dung four, and moss six inches, then a thin layer of dung, and the whole midden covered with moss; its height will thus be from four to five feet, the materials being put loosely together. The compost comes into a general heat, sooner or later after being mixed, according to the state of the weather, and that of the materials; in summer in ten days or so; but in winter not perhaps for several weeks. The compost ought to be attended to in this stage, and its heat ascertained. If it approaches to blood-heat, it ought either to be watered or turned over, and new moss mixed, to prevent injury by too much heat; and if it does not come into heat, the antiseptic quality of the moss will not be reduced.

After the heat has subsided, the midden ought to be completely overturned, upside down, and the inside out, and the moss as much broken as possible; after which it comes a second time into a moderate degree of heat, for a few days; and whenever it cools it is ready for being applied to the ground as manure; but the longer it remains in the midden, the richer will it become. Compost made up in that maner, in January, his Lordship observes, may be ready to be used as manure to the spring crops, and in summer it may be prepared in eight or ten weeks; but it would certainly be better to allow it more time in the state of fermentation in the midden. That which is made up in the month of February or March, may be ready for the turnip or wheat crops; but that which is to be used on the spring crops, ought to be composed during the preceding summer; and the moss should always be dug up and exposed to the frost for one winter, at least, before it is mixed with the dung. The fermentation would be greatly accelerated by an admixture of green herbage: as rushes, sprits, docks, thistles, ragweed, &c. cut before their seeds are ripened. Ashes, hot lime, lime rubbish, lime slacked in water, or any other matter that would accelerate putrefaction and decomposition in the moss might be applied with advantage.

Both the powers and duration of this species of manure, which had stood the test with Lord Meadowbank on a considerable extent of ground, and of much diversity of soil, and during the period of six years prior to the time he published, the results have since been found, on thousands of trials during the last ten years, fully to answer the end which his Lordship proposed; and produced returns no way inferior to the best farm-yard dung, given in equal quantity. His Lordship says, 'hitherto it has been found equal, and indeed preferable, to common farm-yard dung, for the first three years; and decidedly to surpass it afterwards.' And thousands of farmers, who have made trial of this manure for a still longer period, have attested the fact stated by the learned Lord.

This is certainly one of the most interesting discoveries ever made in agriculture.— To be able to multiply every ton of dung into four tons, from materials otherwise of no value, and which nine out of every ten farmers in Scotland can procure, within one, or at most two miles of their farms, and which three fourths of them can find in some corner of their possessions, is a discovery of vast importance to the interest of agriculture, and that of the nation. Many farmers have shown a strong indifference about that valuable manure, and others have prepared it in such a careless manner, as in a great measure to defeat its beneficial effects. But if it were properly made up, and used by all farmers, to the greatest possible extent, it would in a few years greatly enrich the soil, and add one third to its produce.

It is true, that the late Dr Walker, has stated his doubts of the possibility of bringing moss into a state of putrefaction. He says, 'When a vegetable substance has passed through the vinous, the acetous, and the putrefactive fermentation, it is then incapable of having these processes again renewed in it. Much peat, especially that of an ancient date, having been completely putrefied, cannot therefore be again susceptible of any putrefaction.'—'*If recent vegetables, or fresh dung be intermixed with peat, they will ferment, and by their putrid effluvia impregnate the peat earth with fertilizing matter, but without exciting any degree of putrefaction in the substance of the peat itself.*'

A too great desire to reduce every thing in agriculture, and in nature, to an exact conformity with what he conceived to be chemical principles, has drawn the respectable professor into an error. He seems to have thought, that putrefaction has run its full course on the vegetables of which moss earth is formed; and that this species of earth was altogether incapable of having that process renewed upon it, by the aid of dung, or other admixtures. But however correct the Doctor may have been in his knowledge of the abstract principles of science, he is undoubtedly in an error in his application of them in the present case. If putrefaction had run its full course on the plants that grow on moss, as it soon does on other vegetables, no part of them would have remained to form the moss earth which now covers so much of the soil. There is no stage, short of complete annihilation, that can be pointed out as the *ne plus ultra* of putrefaction. It proceeds more rapidly on some plants, and under certain circumstances, than it does on others. It may be retarded or interrupted; but whenever circumstances are again favourable, it resumes its work of destruction, and steadily pursues its course till it has reduced every part of the organic texture of the animal or vegetable matter that becomes subject to its destroying powers; generally it advances fastest at first, and slower after the most soluble parts are reduced. Even on moss plants, and moss earth, putrefaction, unaided by any stimulant whatever, has made, and is still making, some progress. If it had made no advances, the moss stratum would not have had the appearance of moss earth, but that of a heap of vegetables, as entire as those in a hay stack.—Instead of this, however, we find that putrefaction has nearly annihilated the organic texture of the plants, and reduced them to something in the shape, not of plants, but of earth: and where the moss has been formed under nearly the same degree of moisture, the organic texture of the plants is more completely reduced in the under, than in the upper stratum.

If putrefaction had completed its course, neither moss earth, nor any particle of vegetable matter, could have remained; and wherever any thing in the shape of organic matter remains undissolved, whether it may have assumed an appearance of moss earth, or whatever other shape it may be in, it proves, beyond all possibility of doubt, that putrefaction has been retarded, and has not completed its work. Moss, according to Dr Walker's own theory of that substance, and which is the one I have adopted, is a congeries of vegetable matter, under partial dissolution, that has been long kept almost stationary, or under a very slow course of putrefaction, by its antiseptic qualities. It must therefore be incorrect, to talk of putrefaction having completed its course, so long as one particle of the vegetable matter lies undissolved.

When timber utensils, human bodies, or other vegetable or animal substances, are buried in moss, the progress of putrefaction is arrested, or at least greatly retarded; and the thing so deposited is kept nearly stationary, for some centuries, while it remains there. But whenever any of these are dug out from under the moss, and again exposed to the weather, putrefaction, the arch-destroyer of organized vegetable and animal bodies, resumes its work of destruction, and pursues its course, till every particle of the tree, plant, or body, is annihilated, and the substances of which they were formed, by vegetable or animal organization, separated, and either restored to elementary principles, or formed into new compounds. In the same manner, the antiseptic qualities of the moss earth are so powerful, as to resist, or at least retard much, the progress of the dissolving power, while the moss remains in a body. But when it is dug up, separated and exposed to the weather, and the force of dung under putrefaction, or other stimulating matter is applied to it, and the charm of insolubility broken, then the operations of putrefaction are resumed, and go on, till the whole vegetable fibre is annihilated, and the moss earth reduced to the food of plants.

(To be continued.)

Observations on the means of improving Estates to the advantage of Landlord and Tenant, &c. &c.

(From the Irish Farmers' Journal.)

Sir—Notwithstanding the various plans that have been devised and acted upon by landlords to improve their estates and encourage their tenantry, it would almost seem that industry and research were unable to furnish any mode for improving land to the mutual advantage of landlord and tenant, because, if both parties were equally concerned, the country, would by this time display improvements of a most beneficial character. It is difficult, indeed, to point out a system in which the benefits of all parties are equally secured, for in no instance shall we find a compact wherein mutual benefits have a fair balance, in which case, our affairs must be more or less in a state of imperfection. Such subjects are of the first importance, and require an extraordinary exercise of the mind in considering their uses, and a broad view of their principles to arrange them for whatever benefits they may afford—thus it is, that many schemes of improvement are so ill digested, especially when landlords and tenants are concerned, that lasting benefits are lost, or at least laid aside, consequences which the whole face of the country too plainly demonstrates. Under these impressions, it is obvious that landlord and tenant should, in their system of dealing, be mutually concerned in each other's interest, that is, the landlord should encourage the tenant, and the tenant should never lose sight of the indulgence thus afforded—therefore, when such interests harmonize with each other, confidence is engendered, and improvements will advance, and the happiness of society is thereby perpetuated. It is well known that numbers of patriotic landlords have been at great expense by a variety of measures to encourage their tenantry, but with what effect the estates of the nobility and gentry throughout Ireland will too plainly and too painfully tell. To corroborate this statement, it is a lamentable fact, that few estates exhibit any other than a bare, exposed appearance, or a mournful landscape, for want of those improvements which landlords have in their power to effect, and which would be more advantageous to their tenantry than many other expensive measures resorted to by landlords, with a view to improve their estates and advance the interests of their tenantry. Both landlords and tenants are alike often mistaken in their views of practical benefits, for if tenants improve upon determinable interests, they regard their industry as passing by degrees into the landlord's hands, and producing a reaction or rise in the rent at the end of the demise—hence the slovenly state in which farms are seen, and in which farmers live: therefore, it should be corrected by some kind of liberal system on the part of landlords, in order to induce tenants to be more alive to their comfort and respectability. Landlords in many places give lime for manuring, and timber for building, with other miscellaneous assistance; but on the expiration of the tenants' leases, few traces of improvement either on the lands or in the circumstances of tenants are to be seen, notwithstanding those grants of the landlords. Now, if both parties were fully aware of the great advantages of planting trees on ditch fences of farms, it is not to be supposed the deficiency of improvements would prevail to the extent it does. It is true, the tenant may plant at his own expense, and enjoy the property by the forms of law; but gentlemen never encourage that system, because they have no interest therein, and even if they would take the trouble of advising the measure, the inconvenience and expense of procuring trees for planting, and the inconvenience of registering, would be considered by the tenants a matter of too much trouble and expense, and in many cases more than they could easily meet. To those feelings of indifference, or want of mutual benefits in schemes of dealing, many valuable estates owe their bleak and barren appearance; and indeed it is truly mortifying to see whole districts of choice arable land, with farms and fences shamefully naked, and perhaps without a tree sufficient for a plough beam, or even to contain a magpie's nest. It must be also a great drawback from farming benefits to have so much land wasted by ditch fences, without yielding any profit whatever, but which, by ordinary management, might be brought to produce not only common benefits, but absolute wealth at the expiration of a determinable interest by the simple circumstance of planting trees therein; and if a joint interest between landlord and tenant was thus created, wealth in reversion would be the consequence, as well as ornamental improvements. Ditches, with which lands are divided, are generally masses of manure, and therefore favorable to the growth of timber, without any interference with the useful parts of the farm—add to this, the shelter that would be thus created for cattle in winter, which should be no small consideration for a farmer in his calculation of farm-land conveniences. It may be here necessary to remark, that on farms where shelter is created by fences or trees, cattle are found to be in better health and condition, and the farmers in better circumstances than those on cold lands, an observation well worth attending to, independent of the other valuable uses of the system. Now, suppose a landed proprietor to set apart three or four acres of land for the purpose of rearing young trees, and suppose him to give with every farm he would let, a certain number of them to the tenant, under a condition that they should be planted on the division fences of the farm, &c. one half of said trees to be the sole property of the tenant during and at the expiration of his lease, and the other half to remain and be preserved for the landlord in full growth at the said expiration, &c. &c. In this case, and under such circumstances, if the tenant would spare his share of the trees, and let them come to the growth of thirty-one or forty-one years, or the extent of his lease, he might then have a property perhaps of £1000 and the landlord an equal property, all produced from the heretofore useless ditches of an ordinary farm, say thirty acres, and 4000 young trees! A system founded upon such principles could not fail of success, because the expense of trees and planting would be very trifling, and the advantages so promising and material, that all the parties might reasonably anticipate results, in which the tenant in old age might find a support, and the landlord an immense property, created, as it were, from the waste lands of his estate, that heretofore had an unimproved and disgusting appearance.

Should these observations attract your notice, Mr. Editor, you will please to give them to the public. J. M.

KENAUGHT PLOUGHING-MATCH.

The Fourth Annual Ploughing-Match of the Kenaught Branch of the North-West of Ireland Society, took place in a field of Captain Moody's, at the Roe-Mill, on the 25th ult. Sixteen well appointed ploughs were entered—twelve Farmers and four Gentlemen. Several of the ploughs were iron; all were on the Scotch construction; indeed the old Irish plough, with a *guidesman* clad in his *trusty*, is now as rarely to be met with, as iron ploughs were a few years ago. At one o'clock the work commenced, and notwithstanding the difficulty of the ground (30 years lea,) was executed in a very superior manner.—The Judges for the farmers' class were Major Sterling, Mr. Turnbull, and Mr. Sloe, assisted by James Glen. After a careful examination of the different lots, they decided as follows—The first premium, a winnowing machine, to Mr. Andrew Gray; plough held by H. Irwin. The second, a scarifier, to Mr. Samuel Clark; plough held by his son. The third, a brake harrow, to Mr. William Patton; ploughman, J. Hillas.—There being no premium allowed for Gentlemen's ploughs, a sweeptakes was proposed, for which three candidates appeared, namely, Marcus M'Causland, Esq. Arthur Sampson, Esq. and S. Martin, Esq. the latter sent two ploughs. Mr. Wm Patton, Mr. A. Gray, and Mr. Samuel Cochran, acted as judges for this class, and decided in favour of Mr. M'Causland's ploughman, a lad from Ayrshire. Owing to the fineness of the day, the vicinity of the town of Newtownlimavady, and the expectation of superior ploughing, the concourse of spectators was unusually great. A number of fashionably dressed ladies graced the field. The utmost regularity and decorum prevailed, and many experienced farmers expressed their satisfaction at the improvement visible in this important branch of agriculture within the last three years.—At 6 o'clock, upwards of forty members of the Society, with a few friends, sat down to an excellent dinner, at the King's Arms Inn. A variety of loyal and appropriate toasts were given; amongst others, "The King," —"The Duke of York, and the Army"— "The Lord Lieutenant and Prosperity to Ireland"—"The Lord Bishop of Derry, the Patron, and the North-West Society."— The Chairman took occasion to eulogise his Lordship for his liberality, on all occasions connected with the improvement and welfare of the agricultural interests of the N. W. District—(Applause.) "The Linen Trade" —"The successful Candidates of the day"— "The unsuccessful Candidates, and better luck on another occasion"—"The worshipful Company of Fishmongers." Mr. A Sampson returned thanks in the name of the Company and assured the meeting, that no body of men could be more anxious for the prosperity and improvement of this country than the Worshipful Company; they subscribed £20 per annum towards the North-West Society, and two of its Branches, and distributed weekly fifty copies of the *N. W. Society's Magazine* amongst their own tenants. He begged leave to drink "Success to the thriving Town of Newtownlimavady, the capital of Kenaught." The Chairman gave "the health of the Marquis of Waterford," who, to encourage his tenants to compete at the Barony Ploughing-Matches, has this year given premiums for three matches on his own estate. "The health of H. B. Beresford, Esq. the President of the Branch," was received with great applause.

A handsome silver cup, of beautiful workmanship, having been subscribed for by the Members of the Branch, to be presented to their Secretary, Dr. Tyler; the Chairman, in very eloquent language, expressed his satisfaction, that the pleasing task of presenting the cup had devolved on him.—Dr. Tyler, in returning thanks, regretted his inability to express his acknowledgements to the Society for their kindness in presenting to him so handsome a piece of plate. He trusted it should be handed down to posterity, as a lasting testimony of the good opinion of his neighbours towards him.—The Chairman gave "the health of D. Cather, Esq. the Treasurer of the Society." Mr. Cather returned thanks.—A number of excellent songs contributed to enliven the evening.

Various challenges for shows of cattle, horses, wheat, barley, oats, flaxseed, ryegrass seed, artificial pasture, &c. were given and accepted.—Some fine samples of mangel wurzel, raised by Archdeacon Monsell, were much admired.

It was quite delightful to witness the harmony and good humour which prevailed; all seemed anxious to promote the great objects of the Society—agricultural improvement.

A proposition of the Chairman to subscribe for a silver cup, to be competed for at the Annual Ploughing-Match, was received with acclamation. Fifteen subscribers immediately put down their names.

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The annual Ploughing Match of the Kilmacrenan Farming Branch Society took place at Ramelton on Monday the 28th ult. Notwithstanding the severity of the day, ten ploughs started, and the premiums were adjudged as follow:—

FIRST CLASS.

1st prize to James Watt, Esq. Ramelton, for his ploughman, James Hanlon,	*A Silver Medal.*
2d do. to Francis Mansfield, Esq. Castlewray, for his ploughman, Patrick M'Cormick,	*Same.*

SECOND CLASS.

1st prize to Mr John Patton, Ramelton, a set of Cart Harness, value	£3	0
2d do. to Mr Mathew Ray, Clara, a set of Plough Harness, value	2	10
3d do. to Mr James Gallagher, Killycreen, a pair of Harrows, value	1	10

P. S.—The medals were provided by means of a private subscription of a few of the gentlemen of the Branch.

It is much to be regretted that so few of the landed proprietors of the Barony of Kilmacrenan have come forward to countenance this Institution, as every improvement in agriculture, must ultimately tend to their advantage.

OF WEEDING.

In vain are the powers of agricultural industry exerted to adjust the construction of the soil, and dispose it to prepare and duly administer nourishment to cultivated vegetables if unprofitable plants are allowed to prevail and engross that nourishment. All those plants which arise spontaneously in the fields, and are neither cultivated by the husbandman nor contribute to his advantage, are, in the language of agriculture, called weeds. As they thrive without care, and even in spite of discouragement, it is obvious they are of a more hardy and vigorous nature than those which require the fostering hand of man, and will always be apt to get the superiority, and appropriate to themselves every kind of vegetable aliment. The vegetation of the latter will, therefore, be diminished in proportion to the prevalence of the former. Hence it is highly interesting to agriculture to prevent, as far as possible, the production of every kind of vegetable, except those which are meant to be cultivated.

The number of plants which pass under the name of weeds is very considerable. In a former part of this work, I have given a short character of a good many of them, with a view to call the attention of the agriculturist more particularly to that subject, and shall now only make the following general observations to lead us to the best means of extirpating them.

Weeds, and all other plants, are either annual, biennial or perennial.

The first two die, the first or second year as soon as their seeds are perfected, and they are propagated only by their seeds shed on the ground.

The last are not only renewed and multiplied by their seeds, but by their vivacious roots resting in the ground during the winter and putting forth new plants in the spring.—Among these a few shrubs may be ranked; such as, ulex, (the whin) rosa (the briar) robus, (the bramble.)

The seeds of some weeds germinate as soon as they get moisture, and put down their roots into the earth, though they are not in immediate contact with it; others do not succeed unless they adhere to some mellow soil and enjoy the reviving influence of the atmosphere. But many of these seeds, even those of the most diminutive size, will remain dormant for a very long series of years, and vegetate afterwards, as soon as any accident has placed them in a favourable situation.

(To be continued.)

FLAXSEED.

We understand that an alarm prevails throughout the country that the supply of flaxseed will be limited, and the price high this season, in consequence of an extensive speculation which has been made in the article; but from the subjoined abstract of the quantity which may, to a certainty, be expected in this market, we think that it will be impossible to keep it above a moderate price, by any artificial means which may be employed, and that the growers of Flax may dismiss every fear on this head. And we are confirmed in our opinion, by an advertisement which appears in the Derry Journal, of yesterday, offering a very large quantity of it for sale by auction on the 25th inst.

Flaxseed of last year's importion branded fit for sowing this year	4243	HHDS.
Already arrived this year,	7807	
*Daily expected to arrive,	6500	
	18550	

* Of the above 4400 hhds. are hourly expected.

CURRENT PRICES IN DERRY.

Oatmeal ...	13	0 *to*	14	0	*pr cwt.*
Oats ...	0	10½ –	0	11½	*pr st.*
Barley ...	1	0 –	1	1	
Potatoes ...	0	2 –	0	2½	
Beef ...	0	3 –	0	5	*pr lb.*
Mutton ...	0	4 –	0	6	
Veal ...	6	6 –	0	10	
Flax undressed	30	0 –	55	6	*pr cwt*
Five hank yarn	2	9 –	3	4	*pr spl*
Four do. do.	2	7 –	2	10	
Three do. do.	2	8 –	2	11	
One do. do.	2	6 –	2	8	
Hides ...	50	0 –	60	0	*pr cwt.*
Pork ..	40	0 –	45	0	*pr cwt.*

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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Of Moss formed into Manure by being fermented with Dung.

(Continued from page 133.)

Any error that the respectable Dr. Walker may have gone into on that subject, would have been less interesting, were it not that it affords arguments for farmers, too many of whom have shown a culpable indifference, or rather an unjustifiable prejudice against the use of moss as manure, after its utility had been established beyond all manner of doubt. That indifference and prejudice is truly surprising. There are few parts of Scotland where moss compost has not been prepared and used by some farmers, with such success, as to render its utility indisputable; yet many of the very farmers who have witnessed its effects, still treat it with indifference or neglect.

To remedy that evil, I would beg leave humbly to recommend to every proprietor of land, to bind all his tenants to prepare, and lay upon their farms annually, as manure, at least as much moss well fermented and formed into compost, as the amount of the dung which their several farms could be supposed to produce; and to intimate to those whose leases were not expired, that preference might be expected in their new bargains, in proportion as they prepared and applied manure to the land, and executed other improvements on their farms during their present tacks.

If proprietors of land were generally to adopt such resolutions, and they and their factors to act upon them with spirit, the value of many estates, and the produce which they yield, might, by that improvement alone, be doubled in the course of twenty years. The enforcing of such an improvement, by every means in their power, would be one of the most important duties which the proprietors of land, and those entrusted with the management of their estates, can perform to their families, their tenants, and to the nation.

Moss converted into Manure by various Means.—Moss earth may be formed into efficient manure, by any admixture that will excite fermentation, and bring it into a state of putrefaction.

Putrid water will bring moss earth into a state of putrefaction, and reduce it into manure. This is a substance too often to be met with, not only in cities and towns, but in villages, and more or less round every farm-house, and the houses of even the poorest cottager; to the injury of the health of the inmates, and disgust of every person of taste who views their dwellings. The richest juices of the dunghill are suffered to waste in these ugly stanks termed *midden dubs*; nuisances which neither the prospects of gain, the comforts of cleanliness, nor a sense of decency, have yet been able to banish from by far the greatest number of farm-houses. The fat juices of the cheese-press, washings of milk-vessels and kitchen-utensils, soap-suds, and other putrid water, are neither collected together, to be applied as manure, for which they are well fitted, nor even carried off in proper sewers, but too often allowed to remain in putrid stanks near the farm-houses, raising in hot weather the most unwholsome and unpleasant effluvia, injurious to the health of the family, and proclaiming, to every person of taste who approaches their houses, that they have not a proper sense of decency, and are not duly attentive to their health and cleanliness—the very essentials of human happiness.

It will not be easy to prevent water from becoming putrid about farm-houses; but, when that happens, the most proper course is to turn it to some useful purpose; and certainly none can be more proper, or more profitable, than using it to convert moss into manure.

The oils and juices of green flax, extracted when in steep, (which by the present economy is lost, and kills the fishes in our rivers,) might be used in fermenting moss, and forming it into manure. The oils and vegetable juices of flax are themselves the most valuable manure; and, by applying them, and the water they have rendered putrid, to excite putrefaction in moss, a double end would be gained:—The juices and oils which are so valuable would be preserved; the fishes would not be lost; and a quantity of moss would be converted into manure.

Urine of every description ought to be carefully preserved, and applied to the putrefaction of moss. Urine, which is itself a most valuable manure, and is mostly lost through inattention, ought to be carefully preserved from either sinking into the ground where the byres and stables are built on sandy or rocky foundations; or from its rich juices, which are very volatile, being exhaled by the sun. When it is mixed with half-dried moss, the rich qualities of the urine are preserved, and the moss converted into manure. This may either be done, by collecting the urine into a well, covered from the sun and air, till it is put upon half-dried moss; or moss of that description may be stored up in a shed, and as much thrown daily on the floors of the byre and stable, as would absorb the urine of the cattle.

The fumes of dung, while under fermentation and putrefaction, might be rendered subservient to the reduction of a portion of moss. When dung is under fermentation, it throws off, in a gaseous state, much matter, which, if preserved and duly applied, would operate as the food of vegetables, or excite fermentation and putrefaction in moss. A thin stratum of moss earth laid over the dunghill, would prevent these substances from being either exhaled by the sun, or washed away by rains; and while they would be taken up and detained by the moss, they would bring it into a state of fermentation, and reduce it to manure.

Animal substances, of every kind, will operate powerfully, in exciting fermentation and putrefaction in moss earth, and thereby converting it into manure. Lord Meadowbank takes notice of this, and mentions, that with the body of a dead horse, ten tons of moss may be made into rich dung. From an experiment that I caused a friend to make, I can not only corroborate the fact, but assert, that from the body, blood, and intestines of one horse, properly mixed with moss, and fermented by them, with the aid of some weeds, or other green vegetables, all twice or thrice turned over, no less than eighteen or twenty tons of rich dung may be formed in the space of seven or eight months. The fumes of the putrid animal substance reduces the moss earth to complete solubility: and the moss earth catches and retains the effluvia of the putrid animal matter—prevents it from being carried off in gas—and preserves it to enrich the soil to which the moss is applied. How commendable would it be to dispose of dead horses in this way, in comparison with throwing them into a ditch, to become the prey of ravens and dogs, and where the fumes of their carcases, under putrefaction, become obnoxious to man and beast! Twenty, or even ten tons of rich dung, worth from five to seven pounds, obtained at the expense of only a few shillings in labour, are surely a sufficient reward for such a piece of industry, besides preventing the air from being poisoned. The justices are not probably empowered to compel people to such acts of industry, but they certainly have power to prevent the putrefying carcases of animals from remaining unburied.

Not only dead horses, but the carcasse of all animals not fit for the use of man; and all the offals, blood, and intestines of such as are so used, ought to be disposed of in this way. The blood and garbage of one fat cow, if carefully preserved, and duly mixed with half-dry moss, would be sufficient to make several tons of dung. If only the one half of that substance were so applied, many thousands of tons of more dung might be made every year. Moss is to be found within a moderate distance, in almost all parts of Scotland; yet the blood and garbage of cattle slaughtered, even in country towns, where moss could be found often within half a mile, are generally thrown to the streets, to find their way to the rivulet. It is not uncommon, in a dry warm day, to see the sewers along the side of a street, filled with clotted blood, which remains till the rains wash it away.—Much of the dung found in the belly of the animal, is, with her calf, if she has one, disposed of in the same manner: or, if any part of them be carried to the butcher's midden, probably in the centre of the town, the dogs soon scatter them over every street and lane; an intolerable nuisance, and extremely injurious to the health of the inhabitants; and which gives but an unfavourable idea of the police of the place, and the manners and taste of the people. Their health, comfort, and pecuniary interest, would be much promoted, by mixing the blood and offals of every beast that was slaughtered, with moss earth.

Many cows, sheep, and other animals die every year, unfit to be eaten, and their carcases are generally suffered to remain where they fall; or, if at all removed, it is only to the next ditch, where they serve for food to the ravens, dogs, &c. and poison the air.—The quantity of dung such carcases would make from moss would be very considerable, while their pestilential effects on the atmosphere would be prevented. No description of manufacture could yield so large a profit as that here recommended. Dung, before it can be brought to the field, must cost ten shillings, or perhaps fifteen shillings per ton, while, from the mode here mentioned, it may be made for less than a shilling per ton; and, if a just value is only put upon the other advantages to be derived from the practice, at much less than nothing.

It was truly patriotic in the Highland Society, to offer premiums for further discoveries, as to the mode of making moss undergo the putrid fermentation. Every person who has the good of his country at heart, will sincerely wish that their success may be as great as their benevolent intentions are praise-worthy. But till such discoveries are made, we ought to persevere in the use of what is already known. The modes of forming moss into dung are by no means despicable, if farmers and others could only be prevailed upon to reduce them to practice. Industry is the chief thing wanted. By the different methods that have been pointed out of forming dung from moss, many farmers, who have moss in every farm, often in every field, might increase their dung to more than four times its present quantity, and thereby, in few years, more than double the produce of their lands. Industry is all that is necessary to accomplish this end. While the Highland Society are offering rewards for new discoveries, I would recommend to the great landed proprietors, who have moss on their estates, to offer premiums to such of their tenants as should set the best example of industry in the modes already known, and appoint a person skilled in these matters, to teach them how to reduce them to practice.

Some farmers have reprobated the use of lime as a manure, alleging that it injured their lands: But all of them own the utility of dung, which they and their fathers have used as manure from time immemorial. The high price of the article, great expense of carriage, want of good roads, unskilfulness in carting, unpleasantness to handle, fear of running risk, &c. still serve to keep up, with some, the prejudice against lime. Here, then, is a species of manure every where suited to the state of the inhabitants. It can be obtained often on every field, the carriage seldom more than a mile or two, often no more than a ridge's length; no roads needed; soft and easy to handle; no risk to run; no money to advance. This species of improvement must be every way to the farmer's wish; and I sincerely hope and trust, they will soon enrich themselves by it.

Will. Aiton

OF WEEDING.

(Continued from page 136.)

Many seeds are accommodated with some kind of wing or feather, by which they are conveyed from the place of their birth, and disseminated over the fields. Thus the genus rumex have little wings like a bat, by which they are sometimes carried, in a high wind, to to a considerable distance; others are surrounded with light glume, like a mantle, but the buoyant feather of a number of the syngenesia class bears them to the most remote places.

The vivacious roots of weeds are, some branched, some entire, some perpendicular some inclining, some fibrous, some creeping jointed, &c. All of them have the power of putting forth new plants from different parts. Some of those roots extend no farther than the cultivated soil, others penetrate much deeper, and stretch their ramifications in the inferior strata to a considerable length.

From the different characters of those plants which we call weeds, it is obvious that different means of extirpating them are required. Annual and biennial plants are destroyed by pulling them up by the roots, or by cutting the stem under the lowest or first formed leaves: and after they have begun to flower, by cutting them over any where below the lowest branches. But those plants having been propagated by former ones of the same species shedding their seeds, and many of those seeds still lying dormant, the soil is not freed of the incumbrance by destroying the plants of one year.

Vivacious roots cannot be destroyed except by turning them fully out of the ground, and either carrying them off, or exposing them to the air, till they be dried and incapable of vegetating. But many vivacious roots descend so deep, and stretch so far that they cannot be fully eradicated: such can only be checked and discouraged by repeatedly depriving them of their leaves and stems.

Some soils and situations are most congenial to one kind of weeds; and others to another, and those congenial weeds are always the most prevalent. But most commonly weeds of all the above general characters are found on the same ground. When the ground is greatly over-run, a complete winter and summer fallow will, for the most part, be found unavoidable. Rib fallowing before the winter sets in, as above recommended, will prepare the soil for parting freely with vivacious roots, the ploughing and harrowing requisite to tear them up, when the spring drought commences, will pulverize it, and provoke the dormant seeds to vegetate with the first moisture; by repeated turnings, during the summer, the greatest part of them may be made to vegetate, and be destroyed as they rise; and the vivacious roots, which lie beyond the reach of the plough, by being long prevented from exercising their vegetating powers, will be impaired in vigour. When wheat or any crop which is to stand through the winter is intended on such ground, it would be proper that the seed was sown in drills, that by stirring the intervals in the ensuing summer, the tendency which most soils have to condense too much when greatly pulverized, may be counteracted. If spring seed is intended, the last ploughing should be given to the land before the winter's rains commence, and the field accurately surface drained. The influence of the atmosphere, during the winter, will thus communicate the happy medium of consistence on which I have repeatedly enlarged; and the soil as soon as it is dry, will be in the best order for the reception of the spring seed.

But when ground has been under any tolerable management, drill culture will, for the most suit all the purposes of a clean fallow.—In repeatedly turning the intervals, most of the annual weeds may be attacked in the groupe and expeditiously destroyed as often as they spring; and the roots of the perennial, turned up and exposed to the drought, if not altogether extirpated, would have their progress prevented, and their numbers and vigour diminished. But the rows should also be hand weeded, and the hand hoe will often be found an important instrument. Drill culture may thus be partially exercised every where with great advantage, adapting the application to any particular situation or circumstances.—For example, where alternate courses of tillage and grass crops are adopted, in a course of three years tillage, the second might always be in drill; or if there were manure to spare to keep a field in good condition in tillage crops for four years, both second and third might be in drill. The first on account of the tough turf, and the last for the sake of sowing grass seeds would be more conveniently in broad cast. But the weeding of these should not be neglected. The large weeds especially, and all those which are most prevalent, and most productive of seed, should be taken out by hand labour when they begin to flower. By such strict attention to weeding tillage crops, and stocking the ground with proper perennial grasses when laid to rest, weeds would at length be so much subdued as to be seldom injurious.

But it is not to attend to weeding in the time of culture only. It is proper that grass fields also should be kept free from all noxious and unprofitabe herbage. The negligence which may be seen, in this respect, in many places, is shameful. Pastures are sometimes so close covered with large weeds, that pasturing animals have scarcely room to pick up a mouthful, and thus the vegetable food which should nourish wholesome pasture is consumed by useless weeds. The larger weeds, with which pastures are mostly infested, are rumex acutus et obtusifolius, the common dock, senecio jacobea, the ragweed, carduus lanceolatus, the bur thistle, serratula arvensis, the corn thistle, and sonchus arvensis the sow-thistle. The last two are of the number of those plants which extend their vivacious roots beyond the reach of the plough. It is not uncommon with those who affect to pay a little more attention than ordinary to their pastures, to cut down these plants in the flower. If this is done in a rainy time, or if much rain falls soon after, the water descending into the fresh wound of the stem debilitates the roots and discourages the growth of plants for a time. But if such critical rains do not occur, fresh leaves immediately arise to support the roots, and the cutting over has very little effect. They should be annually pulled up, as soon as possible after the flower begins to form, taking advantage of the first shower which happens to fall, to soften the ground and make them draw freely. By pursuing this practice regularly for a number of years the deep lying perennial roots are gradually weakened, and fall into decay. Nor is cutting down the ragweed of much avail.—Some of the plants die, but many survive, and branch out more copiously the next year.—But this plant not being deep rooted, is easily pulled up, when in flower, if the ground be soft at the time. The bur thistle, being a biennial plant, may be killed at any time by cutting it under the first leaves. The common dock is the most troublesome plant, especially in clayey soils, where it is always most frequent. Every bit of its long tap root left in the ground will continue to vegetate, and at length form a new stem. It should be fully turned out with the dock iron as soon as the flowering stem is formed: and as the plants of this kind rises at two seasons, the fields should be weeded twice in the summer that no seeds may be allowed to ripen. The roots should be fully exposed to the drought: for if they lie in a moist place they will continue to vegetate on the surface, and strike out side roots into the ground. All other inesculent herbage on pasture grounds, and all weeds bearing winged seeds, by the sides of roads, ditches, brooks, &c. should be cut down when they begin to flower, to prevent their increase by their seeds being dispersed over the fields.

By this minute and persevering attention to extirpate weeds from pasture as well as cultivated grounds, the growth of useless herbage will be greatly subdued, and all kinds of vegetable aliment more entirely preserved for the nourishment of useful vegetables And when the vast quantiy of unprofitable plants, which spring up every where in the country, is considered, some judgment may be formed of the increase of valuable fertility which must naturally accrue from a general and steady attention to the extirpation of weeds."

New method of preserving Turnips from the fly or beetle.

Many are the nostrums put forth to destroy the turnip fly; none of them have answered expectation. The following plan (without any additional expense or trouble) will be found to ensure on trial a good crop of turnips or any of the brassica tribe, provided the season is any way congenial. For rightly understanding what follows, it must be mentioned, that the ovum or egg of the fly, is deposited in the ground, and remains there during the winter. As the sun increases in heat they are brought to maturity, according to the nature and situation of the land—in some earlier than others, as it is more or less capable of receiving and retaining the solar heat. By the land being ploughed and harrowed, the eggs of the insects are brought to or near the surface of the earth, and being placed so as to receive the heat of the sun, they soon arrive to the pupa state, afterwards to the imago, or perfect form, just in time to destroy the crop of young turnips. The only rational and natural method to counteract the mischievous effects of these vivacious insects, is by close attention to the state of the insect in the land, and adopting the following precautions. The land being dunged and ploughed, but not harrowed, after a few days, or a week, according to the warmth of the weather examine the land, and see if there are any of the pupa or chrystalis of the insect coming to maturity: this will not require much time as they will be found in great numbers, near or within an inch of the surface. As soon as it is seen they are arriving at their perfect state, and before they are likely to emerge from the skin, which surrounds them, plough the land again, so as to throw what was before the upper surface, under the furrow, and as deep as possible, whereby the young insects will in a great measure be destroyed. Then harrow the land, sow the seed and dress it in; but in harrowing and dressing the land, it must be done in as careful and light a manner as possible, not to bring up any of the under part of the land. By doing this the turnip plants will have time to grow into the rough leaf, and be out of danger from the fly, if any should still survive. The seed should be steeped at least 24 hours in water to hasten vegetation. The whole success of the plan will depend on particularly observing the pupa of the insect, and burying them under the furrow. Land ploughed before the winter sets in, and thereby bringing the egg near the surface; will stand a chance of having many of the insects destroyed if the frosts be severe; but from the glutinous nature of the eggs, they appear capable of resisting in a great degree the effect of frost. Many farmers without knowing the real cause, raise a good crop of turnips by giving their land, as they call it one more ploughing than necessary.

In the last number of the Quarterly Review the rage for novel speculations and extravagent projects is exposed and ridiculed.—The foreign mining companies in particular are held up to view, as dexterous schemees on the one hand and foolish gulls on the other. Of similar enterprises in our country, the Review speaks more favourably. "Leave we now, says this writer, these foreign speculations in their full and brilliant blossom, and let us turn to the projects going forward at home, of which there is no dearth, nor want of variety, either in kind or importance. We have mining associations for Scotland, Ireland, and Wales, to all which we heartilly wish success; we have in progress stone-breakwaters, and Iron-chain piers—bridges suspended over rivers, and tunnels bored under them. We have steam engines of all sizes and for all purposes—steam-vessels—steam-coaches—steam-cannon—-steam-hothouses to ripen pine-apples at christmas; and steam laundries to wash and wear our linen; we have milk-companies, fish-companies, trying their baits to catch Thames gudgeons: coal-gas by which we are to ride among the clouds at the rate of forty miles an hour, and whirl along a turnpike road at twelve miles an hour, having relays at every fifteen miles of bottled gas, instead of relays of horses."

Our witty author is not however hostile to all projects; because some are attempted which are absurd or extravagant. On the contrary to all "projects of home growth and manufacture (says he) that are not positively mischievous, we most cordially wish success, the tendency of most of them being to divert into more useful channels, than the foreign ones, that surplus capital accumulated in the country. Home projects will soon find their true value, though the public may for a time be hurried away in the vortex of speculation, it will soon be enabled to discriminate between what is beneficial and what is injurious to its interests.

Whatever may be the result of such schemes to the projectors they will at least contribute to the public benefit, by giving employment to the people. It sometimes happens too that an invention, which at first blush may appear frivolous, and even ludicrous, turns out in the end to be extremely useful. That which fails in one person's hands sometimes becomes important and profitable in another's. It is easy enough to throw an air of ridicule on the laborious trifling of the old alchemists in their search after the philosopher's stone; but we should not forget that the valuable discoveries of modern chemistry owe their origin to those very labours. The brilliant flame from coal-gas which lightens up our streets, and renders them as safe by night as by day, was, but a few years ago considered as a subject fit only to be sneered at, in the hands of a bungling German. It is to be wished, therefore, that every invention should have fair play, and not be disparaged at once on account of its apparent absurdity or supposed inutility.

But it is high time (says our author) that we should advert to the more immediate objects of this article.* It is one in which the commercial, manufacturing, agricultural, and every class are most deeply concerned—we allude to the projected improvement by rail ways, by which a more speedy, certain, safe, and economical conveyance of persons and property is expected to be accomplished. It would be waste of time to point out the vast importance of such a result, which must be felt and understood by all; by the producer and consumer, by him who travels, and by him who remains quietly at home. It is true that we who in this age roll along our hard and even roads at the rate of eight or nine miles an hour, can hardly imagine the inconveniences which beset our great-grandfathers when they had to undertake a journey—forcing their way through deep miry lanes; fording swollen rivers; obliged to halt for days together 'when the waters were out; and then crawling along at the pace of two or three miles an hour in constant fear of being set fast in some deep quagmire, of being overturned, breaking down, or swept away by a sudden inundation.

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* In what follows we give an abridged view of this clever article.

Such was the travelling condition of our ancestors till the improvement of turnpike roads was brought to its present height. The packhorse was now yoked to the waggon, and stage-coaches and post chaises usurped the place of saddle-horses. Yet for heavy goods the progress of waggons was slow, and their capacity limited. This defect was remedied by the opening of canals, an improvement which became, with regard to turnpike-roads and waggons, what these had been to deep lanes and packhorses. But we may apply to projectors the observation of Sheridan, 'give these fellows a good thing, and they never know when to have done with it' for so vehement became the rage, for canal-making that in a few years, the whole surface of the country was intersected by them, and frequently in places where there was little or no traffic to be conveyed. The consequence was that a large proportion of them scarcely paid an interest of one per cent. and many nothing at all; while others judiciously conducted over populous, commercial, and manufacturing districts, have amply repaid the parties concerned, and also, highly contributed to the prosperity of the nation.

How comes it then that these expensive establishments, excellent and useful as they are known to be, are now likely in their turn to give way to the old invention of *Rail-roads.*

The powers of the steam-engine and a growing conviction that our present modes of conveyance, excellent as they are, both require and admit of great improvements, are no doubt among the chief reasons that have set the current of speculation in this particular direction; but we suspect that something must be attributed also to the great encouragement held out by the first minister of the crown, and his colleagues (at a meeting for considering the proposal of a monument to the late James Watt) to those who should effect a further improvement of this mighty engine, and to the promoters and discoverers of other useful inventions. It was truly stated as it had frequently been before, that nothing is too great, nothing too small, for this wonderful machine, which like the proboscis of an elephant, can tear up an oak and pick up a pin—can forge with equal ease, the heaviest anchor and punch the eye of the finest needle—can twist the largest cable, draw out a fibre as delicate as the gossamer, and drag a first rate man of war over the ocean—traversing the seas against wind and tides, and thus bringing nations nearer to each other by quickening their intercourse, and rendering it more fixed and certain.

At this meeting the President of the Board of Trade deemed it a happy circumstance, that we live in an age which gives us all the benefits arising from the invention of the steam-engine, which had not only tended to improve trade and manufactures in the ordinary way but had conferred on them the incalculable benefit of economy, abridgment of labour, and a perfection and rapidity unknown before; and that greater benefits might still be anticipated from future efforts. The Secretary for the Home Department avowed, in the most manly manner, that he derived all his worldly prosperity from the inventive faculties and industry of others, and that he would consider himself unworthy of the situation which he held, if he did not cordially support those who had so eminently contributed to individual and national prosperity. These and many similar sentiments re-echoed by Sir J. Macintosh, Mr. Wilberforce, and Mr. Brougham, occasioned Lord Liverpool to observe that 'where the arts were concerned, there would be nothing like party in the country.' Sentiments such as these coming from such quarters, had no doubt the effect of stimulating the inventive faculties of our countrymen. It must indeed be highly encouraging to the cultivators of the sciences and the arts, to have it publicly declared, that their application to the improvement of the agriculture, commerce, and manufactures of the kingdom, would not only meet with the decided support of his Majesty's government, but also of the leading members of the House of Commons who are politically hostile to it.

As to those who speculate upon making railways general throughout the kingdom, and superseding all the canals, waggons, coaches, &c. we deem them and their visionary schemes unworthy of notice. The gross exaggerations of the powers of the locomotive steam-engine may delude for a time, but must end in the mortification of those concerned. Notwithstanding all their assurances of safety from sea-sickness, from being scalded to death, or being dashed to pieces, we should as soon expect that the people of Woolwich would suffer themselves to be fired off upon one of Congreve's rockets, as trust themselves to the mercy of a steam-carriage going at the rate of 400 miles a day—we will back old father Thames against the Woolwich rail-way for any sum.

Returning however to that important question, which will speedily be brought to issue between canals and rail-roads, it may not be uninteresting to take a general view of the comparative merits of the two. No accurate estimate can be made of their comparative expense, because both must depend on many circumstances constantly varying; but the numerous charges required in the course of a canal occasion a much larger expenditure than a rail-road, mile for mile, supposing them to run to and from the same places; to say nothing of the excess of length which in the canal, will be generally about one third greater than the rail-road. By comparing the average expense of 75 canals, and that of rail-ways (allowing a double set of tracks) the former are found to cost about twice as much as the latter per mile.

The disadvantages of a canal are numerous. The frost at one season stops all conveyance of goods, and the drought at another renders it necessary to proceed with half cargoes.—A rail-road is exempt from these serious drawbacks; and even if snow blocked, nothing can be so easy as to send forward a scraper at the front of the carriage to clear it as it proceeds.

The speed by which goods can be conveyed by rail-ways can be so regulated as to be certain and constant, while boats are frequently delayed for hours at the lockages of a canal. This speed besides is limited on canals as far as the power of steam can be made to exceed the power of friction on rail-roads.—To what extent with safety and convenience, this advantage is capable of being carried, nothing but experience, can determine.—Rail-roads may be made to branch out in every direction to accommodate the traffic of the country, whatever be the nature of the surface;* the possibility of carrying branches from a canal in any direction must depend entirely on the surface, and a supply of water.

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* A stationary engine will pass the waggons up and down any hill that may occur in the line.

(To be continued.)

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt.*
Oats	...	0	10½	–	0	11½	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	3	–	0	5	*pr lb.*
Mutton	...	0	4	–	0	6	
Veal	...	0	6	–	0	10	
Flax undressed		30	0	–	55	6	*pr cwt*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	2	10	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	50	0	–	60	0	*pr cwt.*
Pork	..	40	0	–	45	0	*pr cwt.*

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary or at the Printer's, as soon as convenient, as it is desirable to know what number might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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N. W. SOCIETY'S MAGAZINE.

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PLOUGHING MATCH

FOR PREMIUMS, &C. GIVEN BY THE FARMING SOCIETY OF IRELAND.

On Thursday last, the General Ploughing Match for this District, took place at Granshaw. There was a large and most respectable assemblage of farmers and their sons, which was also graced by the presence of many well-dressed and handsome females. There was but a small attendance of gentry, which may be accounted for in some measure, from the harshness of the weather.—The utmost decorum and regularity prevailed, and the performance, the appearance, and demeanour of the yeomanry, was such, as to do honour to themselves, and to the country to which they belong. Such friendly contentions for superiority as we witnessed on Thursday, not only encourage a spirit of improvement, but have an evident tendency to eradicate the malignant spirit of party, which is the curse and the disgrace of the people among whom it prevails.

The following ploughs started:—

FIRST CLASS.

	Ploughmen.
M. S. Hill, Esq	D. Calaughan.
Rev H. Carson,	P. M'Laughlin.
Lord Bishop of Raphoe,	James M'Elhinny.
Marcus M'Causland, Esq	J. Craige.
William Bond, Esq	R. M'Dermott.
J. Alexander, Esq	J. Curren.
Mr Cowan,	J. Deahan.
James Smyth, Esq	James Logan.
Rev R. Babington,	James Calderwood.
T. White, Esq	S. Morren.
Mr Lithgow,	S. Clark.
Mr James M'Elhinny,	John Toland.
Mr John Scott,	James M'Laughlin.

SECOND CLASS.

Mr. Lithgow,	Held by himself.
J. Lithgow, of Carn,	Himself.
. Tate,	Himself.
'atchell,	Himself.
. Cather,	His Son.
. Patton,	Himself,
. Lithgow,	Himself.
'eadley,	His Son.
. Baird,	Himself.
. C. Shaw,	Himself.
. Osborne,	Himself.
. Clark,	His Son.
A. Sayers,	His Son.
J. Mackey,	His Son.
T. Walker,	His Son.
Mr. E. Moore,	His Son.
R. Moore,	His Son.
J. Woods,	His Son.
E. Divin,	His Son.
H. Gray,	His Grandson.
W. Wilson,	Himself.
A. Noble,	Himself.
J. Wills,	Himself.

Decision of the Judges.

FIRST CLASS.

To James Smyth, Esq	*The Silver Cup.*
To Mr John Mackey,	*The Iron Plough and Silver Medal.*

SECOND CLASS.

To James Logan, ploughman to James Smyth, Esq.	£3
To W. Mackey, son to Mr John Mackey,	2

THIRD CLASS.

To Mr John Mackey, plough held by his Son,	£5
To Mr John Lithgow, plough held by himself,	3

FOURTH CLASS.

To the five best of the unsuccessful candidates in class third, £2 each.

Mr. John Woods,	Held by himself
Edward Lithgow,	Himself
Alexander Noble	Himself
H. Gray,	His Grandson
S. Clark,	His Son

James Campbell,
James Morrison, } Judges.
John Smyth,

The following persons were disqualified from competing, in consequence of not entering agreeable to the regulations.

John A. Smyth, Esq. | James Fulton, Esq.
William L. Smyth, Esq. | Mrs. Maxwell.

At a Meeting of the Committee of the North West Society, held on Thursday, the 24th March, 1825,

James Sinclair, Esq. in the Chair.

The Committee proceeded to take into consideration the establishment, at Grocers' Hall, of an Agricultural Seminary, and reference being had to the resolutions of the Committee of the 11th January, 1825, and communication being held with Mr. Warner, agent to the Grocers' Company,

Resolved—That the Society do accept the offer of Mr. Warner, (made subject to the approbation of the Grocers' Company,) of the 123 acres of land and premises at Fallowlea, for the term of 21 years, at the annual rent of £125 British.

That Mr. Warner be requested to propose to the Grocers' Company, that any elevation wanted by the North West Society, of the out Offices and Buildings behind the Dwelling House, and also such additions, alterations, and repairs as may be required, at the farm yard, should be made by the Grocers' Company, the North West Society agreeing to pay five per cent. per annum, in addition to the rent reserved on the account of such additions, alterations, and repairs, as may be agreed upon between the Agent to the Grocers' Company and the Committee of the North West Society.

That Mr. Warner be requested to acquaint the Grocers' Company, that the North West Society consent that such clause or clauses shall be introduced in the Lease, to secure the non-alienation of the demised house and premises, as the legal advisers of the Company may recommend.

The Secretary having laid before the Committee the following communication from the Royal Irish Mining Company; Ordered—That the same be published with this day's proceedings, for the information of the proprietors of the District.

Board Room, Royal Irish Mining Company, 4, Lower Abbey Street, Dublin, March 17, 1825.

Sir—The Board of Directors of the Royal Irish Mining Company, being anxious to promote the general success of that branch of national industry for which they have been incorporated, have determined to employ competent persons to make Geological and Mineralogical Surveys of the different parts of Ireland, where Coal or Metallic Ores are suspected to be concealed. It must be evident, that such general examinations of the country, as would take place during these scientific researches, would prove highly advantageous in a public point of view—but it cannot be expected, that any private body would undertake extensive and expensive operations, without some prospect of corresponding advantage:—the company, however, require only a fair chance of receiving at one time or other, a reasonable return for the capital they will have to embark in exploring the country, and working such mines as may be discovered, and they desire to give the fullest value for all mineral products.

To you, Sir, they apply with confidence, in the hope that you will facilitate their attempts, to obtain a correct knowledge of the mining resources of the North of Ireland; and should they, through you, obtain the concurrence of the landed proprietors, they will send engineers or scientific persons to examine, and report the nature of their different estates, provided they will grant them a promise of a lease for a reasonable term, of any mines or mineral products that may be discovered, subject to the payment, annually, of one-fifteenth of all workings, or an equivalent in money, at their option:—this proportion they would increase to one-twelfth, after the expiration of the first five years.

The Directors beg to observe, that although a larger disct. or rent may be paid in England than what they now offer, it must be considered, that the company will have to expect disappointment in much the greater number of searches they undertake; and also that mining operations are so new to Ireland, that they will, for many years, be carried on, under serious disadvantages. They feel, that the first object of a great national company, who have received powers and protection from the legislature, should be to forward the general interests of the country, but it could not be expected, that the proprietors would be induced to advance a large capital, without receiving some return for their outlay—in fact, if the speculation of the company were attended with permanent loss, a very short period would again see all the mines of Ireland abandoned, and this branch of industry, which now occupies so much of public attention, would be retarded, if not altogether crushed.

The useful and enlightened views which you, Sir, have manifested generally, and particularly as connected with the North West Society, a body from which the country expect much, induce the Directors to hope, that you will lend the assistance of your talents and influence, to interest the great northern proprietors and the community generally, in the success of their arduous undertaking.

On behalf of the Board, I remain, your obedient servant,

JOHN MACMAHON, Chairman.

To William Marshall, Esq.

The Committee for the Statistical Reports having stated that they had made arrangements for completing a general report of the North West District,

Ordered—That the Secretary do hand over the Parochial Reports, Surveys, &c. to said Committee.

(*Continued from page* 144.)

In every case with regard to speed and the weight to be moved, the rail-road has the advantage, except when that speed is less than 2¾ miles an hour, when it is in favour of the canal, but even this small advantage is lost by the circuitous windings of the one and the direct line of the other. As this rate of going is about the greatest speed of a horse, whether drawing on a canal or a rail-way, and as the resistance of the water at that speed is less than the friction to be overcome on a rail-way, this explains why it is that canals have been hitherto preferred to rail-roads, so long as horse-power only has been used.

With regard to the weight which a horse will draw on a rail-road; it appears that on a well constructed level rail-road, an ordinary horse will draw with considerable ease seven or eight tons at the rate of two miles and a half an hour, or ten or twelve tons at that of two miles an hour. This may be considered as the greatest draught on a rail-way; the same horse, at the same speed, will draw on a canal, about three times the weight. But this advantage is counterbalanced by the greater original cost of the canal than that of the rail-road, and by its greater length. Here the advantage of the canal ceases. As the speed of an animal increases, his strength in drawing is diminished, the resistance of any body floating in the water increases as the square of the velocity; thus whatever power is required to move a floating body two miles an hour, it will require four times that power to move it 4 miles an hour, and 9 times that power to move it 6 miles an hour. Besides a horse going, say four miles an hour, can pull only with a force of 81lb.—it would therefore require no less than six horses to draw along a canal, at the rate of four miles an hour, the same load that one horse would draw at the rate of two miles an hour.

From Mr. Sylvester's calculation it appears that at the speed of two miles an hour, if the same moving force be applied to a turn-pike road, a canal, and a rail-road, the canal has the advantage of the turn-pike as fifteen to one; and of the rail-road as two to one; that at the speed of 2¾ miles, the rail-road and canal will be found to be equal; but at the rate of three miles an hour, the rail-way has the advantage of the canal as 22½ to 20; and that at nine miles an hour, the canal would only take just one-eighth part of the weight conveyed on a rail-way by the same power.

The Committee for the rail-road between Liverpool and Manchester sent a deputation to Kenilworth colliery to inspect the rail-ways and steam-carriages, which had long been in use there, and though the engines, the waggons, and the roads were all capable of very great improvement, they had the satisfaction to witness an engine travelling with 45 tons of coal, at the rate of four miles an hour; and they were informed that the engine had dragged nine waggons (wt. 24 tons) one mile in 5½ minutes, or eleven miles an hour.

Mr. Sylvester says, it would be practicable to go at any speed, limited by the means of creating steam, the size of the wheels, and number of strokes in the engine; it would not be safe to go at a greater rate than nine or ten miles an hour. If by chance the wheels of the engine should get off the rails, which is sometimes the case, a greater speed than that above mentioned would be attended with proportionate danger.

The Committee were anxious of being eye-witnesses of what the steam-carriages were able to perform, and a deputation went to Killingworth, near New-castle. The length measured was 1685 yards; the inclination 1 in 840; the greatest rise in any part 1 in 327; the engine an eight horse power. The weight twelve waggons, and their loads were 48 tons 15 cwt.; the weight of the engine and carriage nine tons. The average time occupied by each of the four journeys, forward and back, was sixteen minutes thirty-three seconds; the average velocity therefore was nearly seven miles per hour. The greatest velocity observed in any part of the journeys was 9½ miles per hour, being sixty-six strokes of the engine in a minute. When it is considered that neither the road nor the engines are to be compared with those that are now made, and that some parts of the rails were loose and irregular, these experiments may be regarded as quite decisive, as to the power and speed that may with safety be exerted on rail-roads. A gentleman who was present at the experiments, and free from all prejudice on the subject, thus states what he saw: —'The engine with wheels of four feet diameter, was relieved of all the waggons, except one empty one, in which about twenty gentlemen got; I sat close to the furnace: the speed appeared to me faster than ever I rode in a carriage. I have no duobt that we went from ten to twelve miles an hour.

The writer proceeds to shew the advantage and the necessity of a rail-road from Liverpool to Manchester; one signal advantage is the saving in point of distance, being the difference between thirty-three and fifty. Besides the benefits to the surrounding country, that resulting to the people of Ireland will be important. By means of this improvement the passage from Manchester to Dublin will be reduced to eighteen or twenty hours: the transit of goods is considerable and rapidly increasing; and the rate at which the corn, the flax, the linen, and the butter of Ireland can be distributed in Lancashire and Yorkshire will be much reduced. Among the plans for bettering the condition of Ireland, the Liverpool rail-road must be considered to take a prominent station, and the people of Ireland will find that it will do so. They feel that whatever shortens the time of conveyance practically diminishes the distance, and whatever is saved in the cost of carriage is a gain to Ireland.

Gardener's Report and Calendar.

It has been remarked that vegetation is not generally in an advanced state, considering the open winter which has passed. Some things, indeed, are as early as they were three years ago; such as plants whose roots spread near the surface of the ground; but trees, and plants with tap roots, are even later than if there had been a frosty winter. The cold rains in November and December have sunk into the soil, and cooled it not only sooner than a hard frost would have done, but also to a greater depth. Hence the lateness of trees, and tap-rooted plants, while the same rains have not cooled the surface so much as is usually done by frosts, but have permitted the growth of grasses, and various flowers during the whole winter. Thus grass lawns require mowing—crocuses, snow drops, and anemonies are in flower—and violets, daisies, primroses, and coltsfoot, have been in that state since October last. It has been ascertained by experiments recorded by professor Leslie, in the Encyclopedia Britannica, that the frost seldom penetrates deeper than a foot, and that the soil at that depth is colder in February than in any month in the year.—This last winter the same degree of cold perhaps took place in December, as is usual two months later, and hence vegetation was retarded.

The garden operations for March are numerous; all main crops generated directly from the seed, such as pease, onions, carrots, parsnips, beets, turnips, &c. should be put in this month. All planting of deciduous trees should be finished; and all pruning, excepting perhaps of the peach and nectarine family, which may be deferred to the first week in April. On these excellent fruits a valuable paper has appeared in the Horticultural Transactions, by Mr. G. Lindley. He lays down a principle for the arrangement of this tribe, which is likely to be generally approved. Mr. L.'s great leading divisions are four, founded on the glands and serrature of the leaf. Each of these classes has three orders, founded on the relative size of the flowers—each of these sub-orders has two divisions, founded on the downy or smooth skin of the fruit; and lastly these sub-orders have each two families, founded on the flesh of the fruit separating or adhering to the stone.

The *flower garden* will require some attention this month. Carnations and pinks in pots, require shifting into larger ones. Auriculas and polyanthuses require only a surface dressing with rich soil, as they come into flower the end of this, and during the next month. A work containing coloured engravings of fine flowers is to be desired. The flower garden and geraniacea of Mr. Sweet is excellent so far as it goes. The author unites the science and practice of both botany and horticulture.

On Mr. FINLAYSON'S HARRROW.

(From Evans and Ruffy's Farmers' Journal.

Sir—I read with much pleasure, in your last week's Journal, Mr. Finlayson's letter, stating the advantages to be gained from the use of his Patent Self-cleaning and Pulverizing Harrow, to which, agreeable to his request, I, as an individual, am most happy to reply.

In the month of January last, I commenced working a field of seven acres full of couch,[*] which had received one furrow only, and by following the course as he has directed, the balance in favour of his new mode stands as follows: —

1st day, put three horses into the patent harrow, and went once over the field of seven acres, say,	3 horses.
2d ditto, ditto, ditto,	3
3d ditto, ditto, common harrow	3
	9
The same course repeated	9
Roll and small harrrow	2
	20

By the ordinary mode.

1st day, yoked 7 pair of horses to 7 ploughs, and turned over the field of 7 acres in one day, say	14 horses.
2d ditto, ditto, drag harrow[†]	4
3d ditto, ditto, common ditto	3
Roll and small ditto	2
	23
The same courses repeated	23
	46

Thus then, by Mr. Finlayson's new implement and new mode, I had the field as thoroughly wrought and cleaned by twenty horses in one day, as if in the ordinary way I had applied forty-six, which makes a saving of 57½ per cent.

This harrow is, undoubtedly, the most invaluable implement that ever was introduced to the agricultural community in this or perhaps any other age. To use the words o Mr. Finlayson, and with him I most cordially agree, land may be cleaned at almost any season of the year, even if in a state so wet and damp that it would be impossible to clean it in the same state by any other implements whatever. Nor will its many advantages be found to end here; when land has been early ploughed and laid long in the seed furrow, and after having received heavy rains, it gets so crusted and bound that good weather has little effect in drying it; and when dry, is then in bad order for the reception of the seed; but by going once over the land with this harrow, it is left so open and loose that it is afterwards (as justly described by Mr. Finlayson,) felt by the foot as if walking over new fallen snow. In this state the land very soon dries, and is immediately got into the best condition possible for the seed; and by a continuation of two or three dry days the farmer can always make sure of a good seed time as the land would be as much benefited by the drought in two days, after having been thus opened, as it would otherwise have been in ten, had it remained in its former state.—I have also applied this harrow with great advantage on turnip land, and where the turnips have been fed off by sheep; after which the land on the top gets so bound that the droppings from the sheep, &c. remain on the surface, and, as it were, cannot be absorbed by the land. If the lands then are of considerable declivity, and immediately after the sheep have been turned off, heavy rains succeed, it consequently follows that a great portion of the manure is swept from the field, which otherwise would be prevented, by going once over the land with this harrow; the land being left open, every thing in the shape of manure will be readily absorbed, or taken into the soil; with also another advantage, which is, the saving of a furrow, the land being better wrought and pulverized by one ploughing only than it formerly was when I gave it two.

Some of my friends have told me, who have had the use of the harrow, that they have wrought and cleaned their land after pease for turnips without ploughing the land at all;

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[*] In the different counties surrounding London, the land has a tendency to get immediately foul, although under the best management, on account of the cheapness of dung in the metropolis, and the high price of lime, little of the latter being used.

[†] The land must be drag harrowed after the plough, and by the ordinary mode; whereas, by the new mode it is not necessary. The patent harrow can be regulated in a moment of time by pressing the hand lightly on the regulator to work at the depth required, whether three, six, or eight inches. Whereas, it cannot be disputed, the longer the common drags or harrows are drawn over the land, the nearer they work to the surface.

this I will believe. In short the harrow needs only to be seen to be in general use.

WILLIAM HILL,

Steward to James Garment, Esq. Working Surry.

(From Evans and Ruffy's Farmers' Journal.)

Sir—I should think it would be interesting to your readers, more particularly at this season of the year, when many of them are so busily engaged at a labour (in which by following a new mode such a saving may be gained) to know, that on all land to be prepared for green crops and fallows, by the use of my Patent Self-cleaning Harrow, such land may be worked at one half the usual expense.

To account for this extraordinary saving, this implement can with ease be drawn by two or three horses, when working at a depth of six or seven inches. It covers a surface of rather more than five feet, and by once going over the land, it is left more open and more pulverized than if it had been turned over by the plough; and what is also extraordinary, it may be said to act both as plough and harrow at the same time, always bringing the couch to the surface, if any be in the land.—Nor does its advantages end here. This implement, by its self-cleaning powers, can work land in a state so wet or damp, that it would be impossible it could be wrought with effect in the same state by any other implements whatever. I have, since its introduction, corresponded with a number of eminent agriculturists, who have used it in various ways, all of whom have agreed, that it will save at least 50 per cent. in the labour when applied to working land of the above description. Such correspondence would have been given to the public long ago, but my establishment for manufacturing these and other Agricultural Implements has not been hitherto equal to the demand, and I withheld such particulars, in respect to their advantages, until I should have the means of executing my orders.

I have however, lately entered into an engagement with Mr. James Russell, of Wednesbury, Staffordshire, for the purpose of making all my Patent Implements. He has commenced manufacturing them on an extensive scale, and has established a Depot at 32, Bennett-street, Stamford-street, Blackfriars-road, London, where they may be inspected.

JOHN FINLAYSON.

ON THE VALUE OF CLAY ASHES.

(From Evans and Ruffy's Farmers' Journal,)

Sir—As your Journal is ever open to the discussion of agricultural subjects, especially those calculated to promote its improvement, I beg leave to give you the result of an experiment tried by a friend of mine with clay ashes as a manure. In the year of 1822, he worked a piece of land containing six acres, and drilled it thirty inches asunder: he manured six drills alternately throughout the field with rotten dung and clay ashes, at the rate of twenty loads of dung and forty-five loads of ashes per acre. It was sown with Swedes and common turnips; both were an excellent crop. The parts manured with ashes were quite as good as the other. The crop was carted off, and the land sown with wheat, and seeded down the following spring; the wheat crop was equally good, and the seeds a very heavy one, especially where the ashes were put. The field is now sown with wheat, and those parts manured with the ashes look more luxuriantly at present than the others which had been dunged. The expense of coal and labour to burn the ashes amounted to a little less than five pence per cubic yard: coal cost eight shillings per ton, exclusive of hauling. Where coal cannot be obtained at a reasonable rate, turf, with a small portion of wood, will answer every purpose to burn the clay, except that it will cost a little more in manual labour. My friend has followed the system of burning clay for the last six years, and in no one instance has he ever failed of having a good crop from it. I am quite convinced that were the system of burning clay or soil more practised, it would greatly increase the produce of the earth.

If you think this, Mr. Editor, worthy a place in your Journal, you are at liberty to insert it.

The land where this experiment was tried is a very tenacious clay and what is called very poor land. I remain your's,

A. B.

ON THE USE OF SALT AS A MANURE.

(From Evans and Ruffy's Farmers' Journal.)

SIR—The repeal of the salt duties having duced me to try the application of salt as a anure, I shall feel extremely obliged if you ll have the goodness to insert the follow- g queries in an early number of your use- and widely circulated Journal; and I pe some of my brother agriculturists who ve tried experiments with salt as a manure, ll favour me with answers.

1. What is the proper quantity and time apply salt to old meadow land of a rich al- vial quality; and the best mode of applica- n, whether by sowing by the hand or other- se?

2. What is the proper quantity of salt, and de of applying it to old pasture land *(not adow)* of rich loamy soil, on a porous sub- l?

3. What is the proper quantity of salt, and de of applying it as a manure to new grass d, on ground of the same description as e last?

4. Will any of your numerous correspon- nts favour me with the result of any expe- nent made with salt, as an application to d under naked fallow or green crops?

5. What is the proper quantity of salt and de of applying it to compost, middens, or ng heaps—in the last case, the cattle which de the manure not having had any allow- ce of salt in their food?

I am, Sir, your humble and obedient rvant,

A member of the Netherby Farmer Society.

ON THE DRILL ROLL.

(From Evans and Ruffy's Farmers' Journal.)

SIR—There is a very effective implement common use upon light soils in some parts Norfolk and Suffolk, and which, upon ch soils, in my opinion, very far surpasses e drill for depositing seed wheats; I mean e heavy iron Drill Roll, which consists of ne or ten cast-iron wheels with conical ges, from two feet eight inches to threefeet d a half in diameter, and fixed by means screws upon an iron axletree, usually, I believe, about seven inches apart; but this distance can of course be varied. This roll, when attached to a stout oak frame, with scrapers between each wheel, forms a very heavy machine, and when accurately drawn over a well-ploughed clover lay, cuts it into drills, and leaves the land in a far firmer state for the seed than any other method I have ever seen practised. When the field is sown, (and if this is delayed for a week or more it is of no consequence,) it requires but a light harrowing to fill the drills and cover the seed. The roll is commonly drawn by three horses at length, and will do from six to seven acres at a journey. Since I came into this county, which is very recently, I have not seen a Drill Roll, at which I am surprised, as it certainly is admirably calculated for some of the dry soils; and as my farm is of this nature, my object, Mr. Editor, in thus troubling you, is to learn, through the medium of your paper, whether I can procure one in London; and if so, at what foundry? I should also be obliged to any of your numerous correspondents who would inform me as to the cost of an iron Stetch Roll complete. With every wish for the success of your highly useful Journal, I remain, Sir, your obedient servant,

ISAAC TOMSON.

To William Marshall, Esq.
General Inspector for Ulster.

SIR—At your request I send you a report of my Scutch Mill at Kilcadden; it commenced working on the 1st of September last, but had not sufficient water (owing to the dry season) for the first fortnight, and since, was three weeks, at different times, under repairs, and on the 1st of March had scutched thirty-five tons, four hundred, and twenty-seven pounds of flax, with eight scutchers, not working more than nine or ten hours in the day. The rollers (which are attached to the mill) broke about a third of this quantity, and when at work, and the flax hard, kept the eight scutchers at work, and when soft, could only employ six. For two months in the beginning of the season, the scutchers' wages was half share; but some of the customers complained that on account of the anxiety of making large days' work, their flax was not cleaned to their satisfaction—I changed to the following, which gave general satisfaction :—

Three foremen	£2	0	0	per month each.
Four buffers	1	10	0	——
One foreman	1	12	6	——
One roller	1	10	0	——
One boy attending	0	15	0	——
Clerk	1	2	9	——
One drier of flax	1	0	0	——
One boy attending	0	10	0	——
Drawing from store	1	10	0	——
Four strickers	0	0	6	per hundred.

My charge was scutching 5s. per hundred—stricking 6d. per do.—breaking 2s. per do.—drying a shilling per do.

The advantage of the rollers for breaking, over the stone or hand break, is very evident; first, that done with the roller requires very little drying—secondly, part of the flax will be left unbroken, and part toweyed in any other breaking—the flax comes from the rollers like a plaited shirt, and a nice polish. I have tried every experiment, and both in quantity and quality the rolled flax has the decided superiority—a number of the customers acknowledges the same. One man whose flax grown in the same field, and steeped in the same water, and was altogether the same, braked part at home and part at this mill, and had it all scutched together in this mill, was offered ten shillings per hundred more for that done by the rollers, in the same market, the same day.

I am, Sir,
Your obedient servant,
WILLIAM WALKER.

Kilcadden, March 1, 1825.

CURRENT PRICES IN DERRY.

Oatmeal ...	13	0	*to*	14	0	*pr cwt*
Oats ...	0	10½	–	0	11½	*pr st.*
Barley ...	1	0	–	1	1	
Potatoes ...	0	2	–	0	2½	
Beef ...	0	4	–	0	6	*pr lb.*
Mutton ...	0	4	–	0	7	
Veal ...	0	6	–	0	10	
Flax undressed	40	0	–	57	6	*pr cwt*
Five hank yarn	2	9	–	3	4	*pr spl*
Four do. do.	2	7	–	3	0	
Three do. do.	2	8	–	2	11	
One do. do.	2	6	–	2	8	
Hides ...	42	6	–	50	0	*pr cwt.*
Pork ..	40	0	–	44	0	*pr cwt.*

NORTH WEST SOCIETY.

A General Meeting of the North West Society will be held at Londonderry, on Thursday the 14th of April, 1825,

1—To receive a communication from Sir George Hill, on the subject of the North West Canal.

2—To receive the report of the Committee, respecting the publication of the Statistical Survey of the District.

3—To receive the report of the General Committee, respecting the establishment of the Seminary at Grocers' Hall, and to make arrangements for carrying the same into immediate effect.

4—To receive a report of the Branch Societies formed since the last General Meeting.

5—To receive a letter from Sir John James Burgoyne, suggesting the distribution of medals to persons excelling in the useful branches of Agriculture.

6—To consider the propriety of altering the days of General Meeting of the Society.

7—To consider the propriety of allowing non-resident Members of the Society to challenge the Cups.

8—To consider the propriety of granting a premium for the best imitation of Stilton Cheese, agreeable to Lady Caledon's receipt.

Sir R. FERGUSON, Bart.
JOHN FENTON, Esq. } Stewards of the day.
CHARLES WARNER, Esq.

Dinner on the table at 5 o'clock. Such members as intend to dine, will please leave their names at the bar at or before 12 o'clock.

W. MARSHALL, Sec.

*** The Corresponding Committee having inspected the Accounts relating to the Magazine, according to a resolution entered into at the last General Meeting, find thatthe veral subscriptions remain still unpaid.—The Committee request that all such outstanding debts may be dischargep, without delay, in order to enable them to make out their Report.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. HILL, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

Printed for the N.W. of Ireland Society by Moss. HEMPTON
by whom Letter-press and Copperplate Printing and Binding are neatly and expeditiously executed, on reasonable terms,

N.W. SOCIETY'S MAGAZINE.

VOL. III.—No. 20. WEDNESDAY, APRIL 6, 1825. Price 2d.

"In its present state, knowledge may be compared to a small portion of gold, dispersed throughout a great quantity of ore. In that condition, the strongest man cannot bear its weight, nor can any benefit be derived from it; but if the pure metal were separated from the dross, even a child might carry it without difficulty, and it may be used with advantage."—*Sir John Sinclair.*

Gentlemen of the N. W. Society,

As a General Report of the N.W. District is contemplated, it may perhaps be advantageous to lay before you a sketch of the General Report of Scotland, a work which from the ability and experience of the authors, and the excellent style of its execution, is likely to be held up as a model for imitation. In order that this great work might possess all the accuracy and completeness which should characterize an undertaking of such public importance, an immense mass of preliminary matter was collected, and the continued labours of many individuals employed. Of the nature and extent of these labours, some idea will be formed by the following extracts:*

General Report of the Agricultural state and Political circumstances of Scotland,

Drawn up for the consideration of the Board of Agriculture, under the directions of the Rt. Hon. Sir John Sinclair, Bart. the President.

In the preliminary observations we were presented with a view of the origin and progress of this undertaking, and a plan of the work.

The Board of Agriculture constituted by Charter in 1793, among the various objects which claimed its attention, considered the following to be of essential importance, viz.—1st, to ascertain the agricultural and general state of the country; and next, to point out the means of its improvement.

The Board began by employing a number of individuals to draw up Agricultural Reports of the several districts of England and Scotland, which Reports were extensively circulated in order to receive the additions and corrections of those who were conversant in the various topics to which they related.—Of these sketches it was observed by Dr. Jas. Anderson,* that in the course of little more than a year the Board had printed a body of authentic facts respecting the agricultural and internal economy of this country, greater than ever was obtained, in any other nation since the beginning of time.

After every district in the island had thus been described, the Board resolved to survey the kingdom a second time; and to have the Reports of the several counties again drawn up, according to one uniform, or general plan. The practices adopted in one county, might thus, with more ease be compared with those of another; and the state of any particular branch of inquiry might be traced through the whole Island, and compared by any individual with the result of his own experience and observation. These Reports, which occupy about seventy volumes octavo, are on the eve of being completed, and contain as an eminent writer, Dr. Coventry, asserts, "more useful and distinct information, on various branches of Agriculture, and on rural concerns in general, than was in print before these were drawn up.†

As the Board was established not only to collect information, but to digest it when collected, it became its duty to compress, within moderate limits, the result of their various publications, so as to render at least the substance of the whole, accessible to every farmer and proprietor in the kingdom. Hitherto the Board has been employed in collecting the materials necessary for a great erection; but the edifice must now be raised, by the formation of which, the future improvement and prosperity of the country will be most essentially promoted.

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* At the end of the 3d vol. is an engraving called—"*The Pyramid of Statistical Inquiry.*" On the base is inscribed—"The Statistical Account of SCOTLAND, containing 893 Parishes." In the centre is—"The County Reports of Scotland, containing 33 Districts." The summit of the Pyramid is—"The General Report of Scotland."

* Essays on Agriculture and Rural Affairs, vol. 3, p. 4.

† The correspondence of the Board, with many enlightened individuals entitled, Communications to the Board of Agriculture, contains many valuable papers; besides which they have printed many distinct works as on draining, on potatoes, &c.

The writer proceeds to shew why it was thought expedient to make the General Reports for England and Scotland, distinct works. Among others he assigns this reason, that by keeping the accounts of the two kingdoms separate, a species of laudable emulation must be excited among those by whom they are respectively undertaken, which cannot but conduce to render each Report more complete.

It was thought most advisable to begin with a Report of Scotland. Great assistance is here derivable from "the Statistical Account of Scotland" in twenty-one vols. which contains a detailed account drawn up by the resident Clergyman of every parish. Nothing can be more satisfactory than a relation of facts resting on such authority; and no other country in Europe possesses such a document. In the opinion of Malthus, "that work exhibits a better picture of the internal state of a country, than has yet been presented to the world, and will ever remain an extraordinary monument of the learning, good sense, and general information of the clergy of Scotland."

In order to draw up this General Report of Scotland with accuracy, a number of well informed individuals have been selected, to each of whom, one, or at the utmost two, or three, important chapters, and sometimes only a particular section of peculiar importance, have been intrusted. So various are the points, either directly or indirectly, connected with the political economy, or the agricultural interests and improvement of a country, *that no single individual, nor even two or three individuals, can be competent to the task, of completing so great a work, in the manner in which it ought to be executed.* A good corn farmer for instance, may be unacquainted with the best mode of managing grass lands; and one perfectly conversant in the management of live stock, may be unable to give a proper description of the implements of husbandry, or of the buildings necessary for a farmer.—Different persons therefore, were selected, conversant with each department; and they were severally furnished, with the information in the county Reports, connected with each particular head, and with such other publications, as might enable them, with the aid of their own personal observation and experience, to prepare the portions of the work they had respectively undertaken. In order to render the whole as complete as possible, the portions thus prepared were submitted to the consideration of several respectable individuals, who voluntarily undertook to revise and correct them.

PLAN OF THE WORK.

A beneficent sovereign, a patriotic minister, or a wise legislature, would naturally be desirous to ascertain a variety of particulars, relative to the state of a country, before they adopted any decisive measures for its improvement. Indeed without such a previous inquiry, the ablest rulers might commit innumerable errors, and their well meant endeavours, might not only be completely frustrated, but might prove the source of much mischief. Whereas, if the circumstances connected with the agricultural and political state of the country, be previously investigated, the beneficial measures which may be carried into effect are both numerous and important.

The following appear to be the principal objects concerning the internal state of a country, which it would be desirable, for an enlightened and patriotic government to ascertain:

1. The geographical state and general circumstances of the country; its situation and extent; political, ecclesiastical, agricultural, and other divisions; climate; surface, soils, and sub-soils; minerals; waters, more especially the rivers, streams, lakes, and arms of the sea; and its geographical or natural advantages and disadvantages.

2. The different tenures by which the territory of the country is held; the number of proprietors so far as that can be ascertained, and the system according to which their estates are generally managed.

3. The nature of the buildings inhabited by husbandmen, and their dependants, with the accommodation they require.

4 The mode in which the land is occupied; whether possessed in severalty, or in common; the rent paid to the proprietors; the nature of the leases granted to the farmers, the covenants they contain; and any other particulars connected with the occupation of the soil.

5. The various implements employed in husbandry; their construction, uses, properties, price, mode of preservation, &c.

6. Whether the land be inclosed or open; and where the fields are inclosed, the kind of fences, the expense of making them, and the advantages attending them.

7. How the land in actual cultivation is managed, and the various crops whether as food for man, for domestic animals, or for other purposes; also the most useful practices in the management of arable land, and those which ought to be avoided.

8. How the land in grass is occupied, whether converted into meadows for hay, or employed in pasture; also the various sorts of grasses that ought to be preferred either for meadows or pasture land; and the preferable systems for laying down in grass, or breaking it up again.

9. The state of the gardens and orchards, in the different districts, and the best mode of managing them, more especially the extent and management of those possessed by the farmer and the cottager.

10. Woods and plantations of so much importance not only with a view to the conveniences and luxuries of civilized life, but to the prosperiy of a maritime power.

11. The state of any part of the territory, whether mountains, moors, bogs, or marshes, lying in common or waste and unproductive, and the means of rendering such tracts fertile.

12. The best means of rendering the cultivated land more productive, and of preserving it in that state more especially the improvements effected by draining—paring and burning—manuring, flooding and irrigation.

13. The means of increasing the productive territory by embankments against the sea and against lakes or rivers.

14. The various particulars respecting the live stock of the country; the different breeds, their food, management, distempers, value, &c.

15. The topics connected with political economy, as the nature and extent of the agricultural, or of other branches of national industry, and the means of improving them, the facilities of intercourse, by the establishment of fairs or markets, the formation of roads, &c. the population of the country, and its distribution; and the state of its poor.

16. The obstacles to improvement of every kind, and whence arising, as want of capital, deficiency of markets, defective police, &c.

17. Such articles of a miscellaneous nature as could not be comprehended under any of the preceding heads; for instance the nature and advantages of agricultural societies, &c.

18. The whole inquiry to conclude with a general view of the means of improvement, and the measures calculated for that purpose.

To prevent the work from swelling to a size that might be objected to, compression has been studied, so far as was thought consistent with perspicuity; and all matters of minute detail, that could not properly be placed in the body of the work are inserted in appendices.

Account of a Wheel-Brake for cleaning and pulverising Land, and for raising Potatoes.

(From the Edinburgh Magazine.)

SIR—I some time ago mentioned to you, that I was making an implement for cleaning and pulverizing land, called a Wheel-Brake, which applies to any plough, the idea of which I received from Wm. Grierson, Esq.

I had it tried in the neighbourhood, upon land that was very full of couch, where the execution was very satisfactory to the farmers; indeed every farmer on whose ground it was tried, kept one of them, and ordered others instantly. I had one axle with two wheels upon it, at the distance of four or five inches from each other: and that farthest from the plough was about four inches less in diameter than the inside one. But the additional advantage of this double one, they thought, was overbalanced by the extra labour it occasioned to the horses. Upon the whole, the saving by the use of a single wheeled brake, was reckoned to be equal to one ploughing in three. Probably, in some situations, it may be still greater.

I have since sold a great many of them; and am happy to say that they seem all to have given equal satisfaction. They have also been applied to the paring plough in drill-husbandry with great effect; and latterly, in lifting potatoes with the plough, where it greatly facilitates that operation.

The diameter of the wheel is about twenty-five inches. It is altogether so simple, that any description, I should think, would be unnecessary. But to show its position when at work, I have added a plough, with the wheel-brake put into its place, or nearly so. The manner of fixing it to the plough is extremely simple; and it may be shifted to any position the ploughman may think best for the nature of the work. The form of the prong for cleaning and pulverizing land is round and drawn to a point. That for lifting potatoes is flat towards the point, and one axle will answer either form of the wheel. The price of a single-wheeled brake complete, is £1 1s. an extra wheel, 10s. 6d.

I beg also to notice, that the plough represents one that I have lately constructed with wood-beam and stilts, and the body entirely of iron. Its advantage is strength, from the body being bolted to the beam, which saves the large mortise for the sheath, in other ploughs, by which the whole strength of the beam is preserved at that point where most likely to break. No part of the wood over being under ground, it is consequently not so liable to rot. I am &c.

SAM MORTON.

☞ The following letter from William Grierson, Esq. to Mr. Morton, is published with that gentleman's permission.

Sir—I have to beg your forgiveness for my want of attention, in not having sooner replied to your request concerning the Wheel-Brake; a draught of which I gave you last time I was in Edinburgh. It gives me great pleasure to learn from you, that it seems to have met with the approbation of those farmers who have given it a trial; and I make no doubt, when it is better known, that it will soon be in general estimation.

The first time the idea struck me, was about fourteen years ago, when I had a farm upon the estate of Rock Hall, belonging to my father Sir Robert Grierson.

I observed, that the method by which potatoes were taken up, was extremely slow;—and late crops of them, where workers were scarce, ran a considerable risk of being injured, if not quite destroyed, by frost, before they could be secured. It occurred to me, that a wheel-brake, or harrow, might be constructed, and attached to the plough, in such a manner as to simplify and facilitate the operation of potatoe-gathering. I took this hint, from having seen an instrument, somewhat of a similar construction, upon a farm in the county of Nottingham, where it was used for the purpose of tearing up couch-grass. After consulting with several farmers of my acquaintance, and having tried a few experiments—the one, of which I gave you a draught, was considered the best.

Before using the wheel-brake for the purpose above mentioned, it is necessary, as a preliminary measure, to cut and carry off the potatoe-shaws; as they are apt to interrupt the operation of the brake, by choaking it; I have therefore always been in the habit of cutting the potatoe-shaws with the sickle before they were quite withered, and of mixing them with horse-dung; by which means, I have always acquired a valuable addition to my dung-stead.*

Having found that the wheel-brake succeeded so remarkably well in gathering potatoes, as to save at a least a half of the expense of raising them, besides doing the work in a much more complete style; I considered next, that it might also be rendered useful in collecting couch-grass, and in pulverizing the soil; but I soon found, that although it answered the purpose extremely well, where the couch grass was long, and the soil light; yet it did the work very incompletely in stiff soils, where the grass-roots were short and cloddy. This suggested the idea of adding another lesser wheel, as before described to you, which gave me the full satisfaction I had expected from it. I make no doubt it may still be improved upon; but it answers the purposes for which it was intended so remarkably well in its present simple state, that care should be had not to render it too complex for common use. I remain, Sir your obedient servant,

W. GRIERSON.

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* Where it is found inconvenient to adopt this excellent practice, the wheel-brake has nevertheless been found to answer. Mr. Baird, of Lochend, and other farmers near town, speak highly in its favour; and they did not find it necessary to cut over the shaws before using it.—Con.

CLEANING GROUND.

This article requires the farmer's constant attention, and by this alone it can be rendered effectual. Early ploughing is of much importance; and it is impossible to be too early at summer fallows, when spring sowing is over. As I at present speak chiefly of land in the second stage of improvement, it must not be considered so clean as in future it may be expected. We shall suppose the land of a free nature, but extremely dirty by means of its late moist state previous to draining; and that it has been capable of carrying one or two crops of oats, in order to reduce its surface sward; and is now under summer fallow. Every farmer may plough to his own mind, according to the nature of the soil, and the grass he has to destroy: but, in general, light ploughing is sufficient to kill grass, which generally runs near the surface; and then, before the manure is applied, a strong furrow is of much use, to mix new earth with the dung. At same time, some soils will not admit of a strong furrow, unless in the spring, before the moisture is exhausted. In such situations, harrowing, rolling, and gathering grass roots frequently after every ploughing, is essentially necessary; but it is not my design to teach either ploughing or harrowing.

Early sowing produces less straw than late sowing, and that in exact proportion to the times (cæteris paribus.)—The knowledge of this principle, which has not been discovered, at least not attended to, till within the last twenty years, is of much importance to the farmer. Before it was known and practised, the hazards of sowing land in a very high state of cultivation was very great. Oats or barley sown in such condition, at the usual period of seed time as formerly, viz. oats, late in March, and barley about the term of Whitsunday, would have been often entirely ruined by being too strong. English barley (commonly from Lincolnshire) and Dutch and many other early kinds of oats, were adopted without changing the time of sowing: and as these have a tendency to produce shorter straw, they were found of much advantage in securing a full crop without lodging. But it is found that any of our oats sown early, produce a shorter and stiffer straw, which has the same effect. Early oats, however, are still much in vogue. The Lincoln barley is almost out of repute. It is well known to some farmers, that the common Scotch barley is the best substitute for it—as, when sown early, its straw becomes shorter, much stiffer, and less apt to lodge. Potatoe oats are a new species introduced within these very few years; and are said to be natives of South America. It appears they were first imported into some of our Midland counties of Scotland, in a quantity extremely small; and that they obtained that name from the circumstance of their arriving in a *package of potatoes.* This is a valuable kind of oats in point of meal, yielding two to three pecks per boll more than the Angus, which, in every other respect, we reckon our best oats. They appear to be again losing ground in the estimation of some people. They are more apt than any other kind to keep the soil, like wild oats, and thereby to annoy the succeeding crops. It seems to be apprehended that, were they to be frequently shaken and ploughed in dry, that they would be as great a weed too. They seem to have another disadvantage, which, in the present circumstances of our labour, is not a small one. They ripen along with the wheat; and that article being now more than ever the chief object of the farmer, it is in danger of occasioning very serious consequences as to the timeous cutting of that crop. Potatoe oats are also extremely apt to shake, and seldom fail to drop in shearing. All kinds of early oats are fit only for fine land, or land, in a high state of cultivation; but upon inferior land, they are the best, when a bad season has thrown the seed time too far back for common ones.—Blainsley oats are early, and have a finer meal as well as finer straw; but they seem mostly out of favour at present. These several varieties of oats and barley afford the farmer great advantages in securing his grass-seeds, as well as his corn crop, in certain seasons and situations.

As to spring wheat, the dwarf kind, which is known to produce short straw, and is an excellent flouring kind, is also advantageous in the above circumstances; and as it has a natural tendency to produce short straw, it ought certainly, upon rich soils, to be preferred in winter.

Picking out the best heads of the most approved grain, is the best method of preserving the species from degenerating.—It must be evident to every one, that grain has a constant tendency to degenerate. But whether its species suffers or not, it must, by a thousand circumstances, be so blended and mixed with other kinds, and even with different grain, that it requires frequently to be renewed by picking and propagating the best heads.—This is found by experience to be the surest method of preserving the grain; and so different is the produce of the earliest and most vigorous ears from that of the poor diseased ones, that it has generally obtained some name to distinguish it from that even of its own kind. A farmer in East Lothian, (a Mr. Hunter) some years ago found, in a cold, bleak situation (Coldingham muir,) a very fine looking vigorous head of wheat; which, being ripe at a period earlier than might have been expected from its situation, he brought with him; and having repeatedly sown its produce, has at last furnished seed to a considerable part of that county, and even to farmers in many a distant county. It is an excellent kind of wheat; being considerably earlier and more prolific than any kind we are yet acquainted with. Mr. Hunter has great merit, not only for his original attention to this article, but for the unremitting vigilance bestowed in preserving it free of mixture. It is now distinguished by the name of Hunter's Wheat. I am, &c. EUCLID.

PARSNIP WINE.

(From Evans and Ruffy's Farmers' Journal.)

SIR—The following extract is taken from "Philips's History of Cultivated Vegetables."

"Wine made from these roots approaches nearer to the Malmsey of Madeira and the Canaries than any other wine; it is made with little expense or trouble, and only requires to be kept a few years to make it as agreeable to the palate as it is wholesome to the body; yet fashion induces us to give pounds for foreign wines, when we can obtain excellent wines of our own country for as many shillings."

Being in the habit of making a variety of wines, and giving the subject much attention, I willingly bear testimony to the correctness of Mr. Philips's statement. Parsnip wine surpasses the other home-made wines, in the same ratio of excellence that East India Madeira is superior to Cape.

Under these circumstances I ask leave, through the medium of your useful paper, to offer to the public specific directions for the manufacture of Parsnip wine; there not being, to my knowledge, one published receipt on the subject.

To every 4lbs. of parsnips, cleaned and quartered, put one gallon of water; boil them till they are quite tender; drain them through a sieve, but do not bruise them, as no remedy would clear the wine afterwards. Pour the liquor into a tub, and to each gallon add 3lbs. of loaf-sugar and half an ounce of crude tartar. When cooled to the temperature of 75°, put in a little new yeast; let it stand four days in a warm room, then tun it. The mixture should, if possible, be fermented in a temperature of 60°.—September and March are the best seasons for making the wine. When the fermentation has subsided, bung down the cask, and let the wine stand at least twelve months before bottling.

If great delicacy of flavour be not indispensible, moist sugar may be substituted for loaf, and some expense thereby avoided.—But the wine may be made with good loaf, or crushed lump sugar, and not cost more than 7½d. a bottle!

I am, Sir, your's, &c. L. S.

P. S If some scientific person would favour the public with a chemical analysis of the Parsnip, it would facilitate future experiments in the manufacture of the wine; and from which experiments great improvements might reasonably be expected.

At the District Ploughing Match, held at Bannow, County Wexford, on Wednesday, March 16, 1825;

The first premium was adjudged to C. O'Neill, a pupil of the Bannow Agricultural School.

The judges would also have awarded the first premium in the second class to Robert Power, the lad who held Mr. Boyse's plough, but that he was disqualified by not being a hired servant of Mr. Boyse's. This lad is a pupil in the Bannow Agricultural School.

IMPROVED LOOM.

We have seen this week a loom invented by Mr. J. Burn, of this town, called the *Union Loom*, having united it to Mr. Will's patent apparatus for sizing, dressing, and drying, while in the operation of weaving. By this method, it is to be observed, the warp is not required to be sized before being put into the loom, and in many instances, single yarn will work as well as double. Other advantages are, that finer yarn can be woven, and an expert operator will produce one-fourth more in a given time than upon the old plan of dressing and drying. The loom is so compact as to occupy a space of only four feet in length. It may also be worked, even in the warmest weather, in an ordinary room and thus obviate the necessity of weaving in damp cellars, so detrimental to the health of the workman. We have no doubt that this ingenious improvement will be generally encouraged; and we understand that W. Grant, Esq. near Bury, has intimated his intention of becoming its patron, and of having 500 of them at work on his premises at Ramsbottom. Several other gentlemen have also expressed their approbation of it.—*Manchester Courier.*

ON THE PROPER REGIMEN FOR SHEEP.

(By Professor Daubenton.)

A good regimen is necessary to the preservation of the health of sheep: hence, too, one of the best means of curing their disorders. Attention should be paid to the choice and quality of food placed in the rack, as well as to that which they crop in the fields; because from such is derived their sole nourishment in bad seasons; and because the most succulent pasturage is the most dangerous.

Tares, trefoil, lucern, clover, and all those grasses equally relishing to sheep, and favourable to health, may prove noxious, if taken in too great quantity. The air which they engender swells their greatest stomach like a balloon; the tension obstructs rumination; and the increase of the size of this stomach compresses the large vessels; stops the circulation of the blood; and causes death, if speedy assistance be not given to facilitate the evacuation of the condensed air, and the passage of blood in the large vessels.

The richer and more succulent the pasture is, the more should the shepherd be distrustful of it. To such he should drive his flock only when they are already partly satisfied, suffering them to remain there but a short time. Grasses, hurtful by their bad qualities, are much less to be feared; sheep do not eat of them, although pressed by hunger. Of this I have to offer some convincing proofs.

In a small space, formed by four hurdles, I enclosed two sheep—for these animals are so disposed to herd together in numbers, that, if a sheep find itself alone, it is always restless, and endeavours to join company. I caused to be placed successively in the rack, for the two sheep confined within the small space, plants of a noxious quality, or supposed to be so, such as euphorbiums, bryony, ranunculus, sceleratus, tuberous ranunculus, and many others. The euphorbium and bryony remained untasted in the rack from morning till night. The sceleratus and tuberous ranunculeses, on the other hand, were devoured with eagerness. During eight days, only one of these plants was given as their sole nourishment; and every day water was brought them, of which they drank very little, or refused to drink; which evidently proves, that these plants do not affect sheep, although very bitter—the tubercles of the tuberous ranunculus especially so. These proofs appear to me decisive—since a sheep passes a whole day without eating, and offers not to touch a particular plant in his rack: he will never eat this plant in the fields, where others more to his taste are to be found. One plant which has been the sole food of a sheep for eight days, without any apparent bad effect, is still less an object of suspicion in the fields; for we do not find that sheep prefer it always to the other plants which they there find.

Shepherds, it appears, have little to fear as to the regimen of sheep in a good pasture, except the too great quantity of succulent food which they may devour; but the fodder given them in the racks should be carefully attended to.

Sheep become disgusted with their provender when it has contracted a taste or a smell disagreeable to them. Thus, hay suffered to grow rusty in the fields, heated or grown mouldy in lofts, exposed to the exhalations of dung, or tainted by rats, is bad aliment, causing stronger ground for apprehension, when not quite so much spoiled as to be absolutely rejected by the sheep, but sufficient only to prevent them from taking a proper quantity. In the latter case some do not think it necessary to supply them with better food, altho' they perceive that they eat less than if it were in good condition. They are not aware, perhaps, that sheep quickly perish, and are exposed to many distempers when they do not take a proper quantity of food. It is then that the animal languishes, becomes scabby; and the best counteracting remedies cannot avail, so long as the cause remains. The wool takes a bad growth; the blood-vessels, which, in a healthy state, were of a lively red colour on the white of the eye, grow pale; and serious and mortal diseases approach, if not prevented by strengthening the sheep by a supply of better fodder.

Sheep require abundance of food, particularly during their three first years; this is requisite, not only for their subsistence, but also for their due growth, and the production of suet; which is peculiar to these animals, and which contributes much to the good quality of the wool.

When the grass of the pasture, or the fodder of the rack are not in sufficient quantity to furnish nourishment to all the sheep of the flock, the more vigorous outdo the weaker in the fields, and crop the best grass, or drive them from the rack, greedily engrossing the fodder to themselves. Thus, those sheep already enfeebled with a bad constitution, or the seeds of some distemper, languish in want of provision; they daily decay; they lose their wool; and soon exhibit symptoms of many diseases, and chiefly of that called the rot. All these evils might be prevented, by giving a daily supply of food to the sheep in want of it. These may be known at night by the state of the belly, which will be found not so much swelled as it ought to be; but this is a doubtful and precarious sign, when only a small quantity has been wanting in the day. Even such trifling deficiency, however, is sufficient to diminish the quantity of milk in ewes, and to stint the growth of lambs. It is extremely hurtful when it occurs repeatedly, and may be almost always dreaded where the pasture or provision is not abundant. It is requisite, then, to know how to proportion the number of sheep in a flock, to the quantity of food which can be furnished them. This is an essential point in the regimen of these animals. But what rule are we to follow, in order not to be deceived in this calculation, and consequently to maintain as many sheep as can be well fed? I have endeavoured to solve this problem, which appeared to me of no small importance to the landed proprietor, to agriculturists, and, in general, to the prosperity of manufactures and of commerce.

(To be continued.)

Erratum.—In our last week's Report of the General Ploughing Match; for "*John Woods,*" first of the five best of the unsuccessful candidates that gained £2 each, read "*Thomas Baird,* plough held by himself."

CURRENT PRICES IN DERRY.

Oatmeal ...		13	0	*to*	14	0	*pr cwt*
Oats	...	0	10½	–	0	11½	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	4	–	0	6	*pr lb.*
Mutton	...	0	4	–	0	7	
Veal	...	6	6	–	0	10	
Flax undressed		40	0	–	57	6	*pr cwt*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	3	0	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	42	6	–	50	0	*pr cwt.*
Pork	..	40	0	–	44	0	*pr cwt.*

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary; under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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N. W. SOCIETY'S MAGAZINE.

VOL. III.—NO. 21. WEDNESDAY, APRIL 13, 1825. Price 2d.

We proceed with our account of the General Report of Scotland.

Chap. I—Contains six Sections, of which the first, and the fifth, and sixth, are written by Mr. George Robertson; the subject of the first Section is, the situation and extent of Scotland, including the islands—that of the fifth, the minerals and fossils—that of the sixth, the waters of Scotland. Section second, by the Rev. Dr. Skene Keith, contains the general divisions of the country, political, ecclesiastical, and agricultural. Section third, by the Rev. Dr. Patrick Graham, on the climate. Section fourth, by the Rev. Dr. Singer, on the surface, soils, and subsoils. This chapter closes with observations on the natural advantages and disadvantages of Scotland.

Chap. II—On the state of landed property, by Mr. Walter Thorn and others, contains ten sections, viz—1, On the value and extent of estates—2, Tenures—3, Management—4, Qualifications of voters—5, Property held in common—6, Property under entail—7, Property held by corporate bodies—8, Manner of registering deeds, &c.—9, Servitudes—10, Burdens. In conclusion are remarks on the advantages of possessing landed property in Scotland, which are certainly very great and important—They are as follows:—

1. The absolute security of the proprietor's right, by means of a series of records the most ingenious and complete in the world.

2. The easy transmission of property from one man to another, by a set of forms, entitled "*Investiture*," which are simple and comprehensive.

3. The exemption from the payment of tithes in kind, which if once valued, do not afterwards increase with the progress of improvement.

4. The exemption from poor rates, except under great modifications.

Besides these advantages of a public nature, which are founded on the law of the country, and which place the proprietors of Scotland in a more favourable situation than the landholders of almost any other country; the following advantages, originating from the good sense and spirit of the proprietors and cultivators themselves, merit peculiar attention.

1. The general practice of granting leases, which secures the rights of the cultivators for a determinate period, identifies their interest with that of the proprietors, and enables them to carry on plans of improvement, with the prospect of an ample, though not perhaps an immediate return.

2. The diffusion of agricultural knowledge, and the prevailing taste for reading works, containing information relative to the cultivation and improvement of land, by which the discoveries of one individual are quickly communicated to another. And

Lastly, the enterprising spirit of both the landlords and tenants, which has enabled them to surmount difficulties of every description, to realize new theories, by an improved system of practice, by which the progress of the art is greatly promoted.

There are likewise local advantages which are enumerated.

1. There are considerable natural woods; and where there are not, yet *plantations*, the cheapest and most profitable of all improvements may be carried on to a very great extent.

2. Minerals abound which if properly wrought would no doubt be very profitable.

3. Salmon fisheries. 4. Sea fisheries. 5. Burning of sea weed into kelp, has become a source of great profit to some estates; and its value is likely to increase, while Spain continues in a disturbed state. The price at one time had risen from £7 to £20 per ton.

6. In the Highlands, since the introduction of sheep, property has been much improved in value. For the same extent of ground will in those districts produce twice as much mutton as beef, besides the value of the fleece.—In regard to wool, its value must be greatly increased indeed, if the Merino breed, or even a cross with them, would answer that part of the kingdom, which there is every reason to expect; sheep farms will then be worth at least double what they are at present.

7. Great variety and abundance of game.

8. Parliament has fortunately adopted the system of attending to the improvement of the northern parts, or in other words of *colonizing at home.* The new roads, the Caledonian canal, and improved harbours, must be of immense advantage, by augmenting commerce and extending the fisheries.

On the whole, the advantages above enumerated, joined to the exertions of the manufacturing and commercial interest, have raised Scotland to a state of prosperity, which half a century ago, the most sanguine *economist* could scarcely have imagined; and the same causes continuing to operate, the people are progressively advancing in national wealth and individual happiness.

Chap. III—Occupies forty pages on buildings connected with agriculture, by Mr. R. Creighton, architect in Edinburgh. It explains the principles to be attended to in the construction of such buildings, and contains the author's views, illustrated by engraved plans, on the following subjects:—1, Farm-houses—2, barns—3, granaries—4, stables—5, feeding-houses—6, cow-houses—7, calf-houses—8, dairies—9, poultry-houses—10, pig-houses—11, boiling-houses—12, cart-sheds, &c.—13, root-houses—14, stack-yards—15, straw-yards, dung-pits, &c.

Chap. IV—On the occupation of land, by the Rev. G. S. Keith, contains remarks on—1, lands occupied in common—2, cultivated by the proprietor—3, rented in severalty by farmers. This is a long and instructive chapter—the second section of part 3 gives an interesting account of Scotch farmers, whose characters in different districts exhibit considerable variety, but who altogether appear in a very advantageous point of view. We shall probably revert to this subject on a future occasion. The remainder of this part treats of leases, rents, burthens imposed on the occupier, expense and profit of farming.

The concluding paragraph is important—"The expense of farming has no doubt increased, in a much higher ratio, than that either of the depreciation of money, or the rise of rent to the landlord: but this has been accompanied by such improvements in farm-buildings, inclosures, implements of husbandry, and in the more correct cultivation of the soil, that Scottish farmers in general have a reasonable profit for their capital, labour, and attention; *and indeed generally have most profit, where their expenses are greatest, and where their operations are conducted in the most spirited and judicious manner.* It is not saying too much for the great improvements which have been made in Scotland within the last thirty years, when it is affirmed, that the occupiers of land, now raise at least one-half more food for man and beast than what was produced before the year 1782. Not only has the population increased considerably, within that period; but the people eat much greater quantities of butcher-meat and wheaten flour. Nay the horses now receive as great a quantity of oats annually, as was formerly allowed for food to one-fourth of the inhabitants. And from the spirit of improved agriculture now generally prevalent, it is probable that both the population and produce of the soil will continue to increase in nearly the same proportion, for many years to come, perhaps for ages, if not counteracted by injudicious laws, adverse seasons, or national calamities.

(From the Irish Farmers' Journal.)

Sir—I am much pleased that Mr. Scott, our great champion for the amelioration of national distress, and protector of public rights, has disputed the statements respecting the merits of my Patent Harrows.—Without further preface I challenge Mr. Scott to meet me on Home Farm, Lealham, belonging to Lord Lucan, near Staines, Middlesex, on Friday, the 8th current, at 11 o'clock, A. M. with his most improved implements, when on said day we shall mutually appoint Judges to report the proceedings, and when I am prepared to forfeit Fifty Guineas if I do not clean and work one acre of land, more or less, with my Harrows, as the Judges shall think fit, at one half the expense of Mr. Scott, allowing him the privilege of whatever implements he thinks will best suit his purpose. Your insertion of this will very much oblige, Sir, your most obedient humble servant,

JOHN FINLAYSON.

N. B. On same day or the day following, as circumstances may admit, I shall give this gentlemen a further opportunity of shewing off his practical prowess between the stilts of the Plough. I shall, on heath land (such as his farm was a few years ago) with one of my Ploughs, and one pair of small horses plough as much, and in better style than he shall with any two of his Ploughs, and I shall allow him to put four horses to each Plough, and to have the use of drivers. This I shall do subject to a similar forfeiture of Fifty Guineas on my part, in case of failure. It may be of some importance to know of such a plough, when in the united kingdom of Great Britain there are upwards of 20 millions of acres of waste land. I have written to Mr. Scott in order to give him time to prepare for coming to the field under the best advantage.

On eradicating some of the more common species of Ranunculus, or Crowfoot.

(From the Irish Farmers' Journal)

Sir—In your paper of the 5th instant, I observed that one of your readers (J. D.) is anxious to know of an efficacious mode of destroying crowfoot. I am afraid that the mode I am about to recommend, is one which must have occurred to every person who has tried to banish this noxious weed. However, before entering upon the eradicating principle, I beg leave to premise a few words in explanation of the term crowfoot, as made use of by your correspondent J. D.

Crowfoot is the general English name given to the extensive genus of plants called ranunculus, and therefore includes a considerable variety. Those who are practically acquainted with the indigenous plants of this country, know that at least four of her perennial species of ranunculus are almost equally common on dry and cultivated grounds,* viz. the repens, acris, bulbosa, and ficaria. The first mentioned species grows commonly in neglected gardens and tillage lands, and is among the first perennial weeds that point out the absentee proprietor, or indolent husbandman. From its throwing out runners, which root readily at every joint, it is much more difficult to eradicate than the acris or bulbosa, which (generally known by the name of butter-cups) are commonly found in meadows and pastures. From their upright habits of growth, they are much easier dug out than the repens. The natural habitats of ranunculus ficaria, or pillwort, are under the shade of trees, in shrubberies, and in raspberry and gooseberry quarters; but it will thrive wherever it obtains a footing. The smallest particle of its semi-tuberous root will grow—and it is, upon the whole, the most troublesome of our native weeds to banish.

I have now to apologise for this disgression from the object of inquiry, and hope that the few remarks made will not be considered out of place. To the practical botanist it is truly amazing how many important matters are overlooked by gardeners and farmers in this way of generalizing hundreds of plants, each in their nature and qualities immutably distinct. I am very far from thinking that every one engaged in the cultivation of the soil should be a scientific botanist—intimately acquainted with all the minutiæ of artificial and natural arrangement—with all the phenomena of the vegetable economy, &c. &c. but I do contend that they ought to be acquainted with the vegetable productions of the country around them, as well as with those plants which they cultivate. There is nothing to prevent any person of ordinary intellect, by a little industry, to acquire a knowledge of the indigenous plants of the country, without burdening his mind with the ever-varying language of botanical nomenclature.

As to destroying the different species of crowfoot particularised, I am clearly of opinion that the best mode is by digging up the roots in dry weather, and carrying them instantly off the ground. This is not so tedious an operation, at least as far as regards the three first mentioned species, as may at first appear. A man with a handy three-pronged fork, and a boy to pick up the weeds in a basket after him, will clear a considerable space in a day. The weeds can be afterwards mixed with lime or hot dung, in order to be decomposed like other vegetable substances. I have frequently seen the different kinds of crowfoot alluded to, survive the process of summer fallowing, unless when great pains were taken to pick them out—and every gardener knows how completely the roots resist the severity of the weather, in land ridged up to be meliorated by exposure to the action of the winter frosts.

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* I here use the term dry grounds, in contradistinction to the habitats of the aquatic species of ranunculus.

I am, Sir, your's, &c. AGRICOLA, Junior.

ON THE PROPER REGIMEN FOR SHEEP.

(Continued from page 160.)

I confined in a small space, two sheep, about twenty inches high, (the height of most wooled animals in France.) By way of experiment, I caused the sheep to be fed for eight days solely on grass newly cut, and weighed, before being placed in their rack. Care was taken to pick up, and replace in it all that the sheep let fall, and to weigh that which they would not eat in consequence of its being too tough, or because it possessed some bad quality. From this trial, frequently repeated, it appeared that a sheep of middle stature eats about eight pounds of grass in a day. The same experiments, conducted with the same precision, in regard to the fodders of hay or of straw, have proved, that a sheep of middle height likewise eats daily two pounds of hay, or two pounds and a half of straw.

In order to ascertain how many pounds of grass compose one pound of hay, I caused the grass to be weighed as soon as cut; it was then spread on cloths exposed to the sun, that none might be lost, though, at the same time, well dried. Being thus converted into hay, I found its weight reduced to one-fourth; eight pounds of grass had given only two pounds of hay.

Agriculturists know how many cart loads, or trusses, a field will produce; therefore, they may judge how many sheep it can maintain in hay or in grass. They have a rule, then, for proportioning the number of their sheep to the quantity of pasture and of fodder with which they can supply them.

Having determined the quantity of solid food essential to the proper regimen of the woolled kind, I made other experiments upon these animals, with a view to ascertain the time at which they should drink.

It is well known that they seldom drink when fed upon fresh grass, but are in want of water when they have only dry meat. Different opinions are pursued as to the proper time for watering them. In some countries, they are taken to water once or twice every day; in others, not for one, two, three, four, and even five days. By the following experiments, I have endeavoured to ascertain which of all these modes, so different from each other, is entitled to preference.

I shut up in a stable, in the depth of winter, a small flock, of which all the sheep were marked with a number. They were kept night and day, without being suffered to quit it, and fed with a mixture of straw and hay, without any other aliment. Each day, a shepherd carried in his arms, successively, some sheep out of the stable to let them drink, in my presence, out of a vessel, gauged at different heights; and then took them back into the stable, when they had either drank, or refused to drink.

By this method, I knew how much water the sheep had taken, when presented with it once, twice, or thrice, each day, or only once in two, three, four, or five days.

Most of the sheep in this little flock passed a month in the stable without drinking.—Their appetite was always the same; and they experienced no other inconvenience than that of thirst, of which they gave evident proof, by running to lick the moist lips of those carried back to the stable, on return from drinking. The results of these experiments, which I cannot here detail, led me to conclude, that sheep, with no other nourishment than dry hay, and within reach of water, could pass days without drinking; but they would take a greater quantity of water the following day than if they had drank the evening before.—This quantity increases to a certain degree, if they have been deprived of water for many days together. They are then tormented with thirst, for they are eager to get a drop of water; and, if they could find it in abundance, they would drink too plentifully for their temperament, subject as they are to effusions of serosity, which produce mortal hydatides in the brain, and the rot, a disease no less fatal.

The best plan is, to drive the flock every day to the pond, and to make it pass slowly without stopping there, when it will be found, that the only sheep that drink will really want to drink. In countries where water is scarce, it frequently happens that the pond is far distant, and the flock cannot be driven to it without being fatigued. In this case they may pass many days without drinking; but, when fed solely on dry meat, it must not be delayed too long. This aliment differs much from fresh grass, in consequence of the loss of moisture by drying; yet sheep take daily the same quantity of solid food, whether in grass or in hay. In the experiments before mentioned, I found their appetite perfectly equal: for they eat eight pounds of grass, or two corresponding pounds of hay, which I found to be the product of eight pounds of grass. The evaporation carried on during the making of the hay, takes off three fourths of the substance of grass in fluid particles. Thus, the sheep which eats two pounds of hay, is deprived of six pounds of liquid aliment, which it would have enjoyed by eating eight pounds of grass. It supplies a part of this deficiency by drinking about three pounds of water, when fed upon hay; but this water is not in sufficient quantity, and possesses not the same quality as the liquid of the grass evaporated in drying.

There can be no doubt, that this difference in regimen is productive of bad effects. I shall mention some proofs of it, which are indeed too evident and too frequent.

In countries where the snow remains upon the ground for one or two months, the cattle are reduced to dry fodder, so long as it lasts; then the weaker sheep, and chiefly the lambs, the sheep of the second year, the pregnant ewes, and those in milk, languish and drop off. Shepherds denote this miserable state by saying, they melt their fat. They certainly grow very lean, and fall off in great numbers.

I have often reflected upon the cause of this evil, and the means of preventing it.—After having prosecuted every inquiry I could think of, it appeared to me to arise solely from a change of diet too suddenly effected. In one day, the sheep are reduced from eight pounds of grass to about two pounds of dry fodder and three pounds of water. They are thus deprived, therefore, all at once, of three eighths of their wonted nourishment; and these three eighths composed the half of the fluid part of it.

According to my experience of the quantity of water taken by sheep, it appears, that their drink can supply only one half of the liquid which grass contains more than hay. It would be dangerous to excite them to drink a greater quantity of water, because they are very subject to infiltrations. We must therefore endeavour to supply them with at least a small quantity of fresh food every day, in order to correct the bad effects resulting from dry meat. The most obvious of these bad effects appears in the third stomach, composed in the interior of a great number of membranous folds detached from each other, although it is only from eight to ten inches in circumference when filled with air. During rumination, the food passes from the throat into this third stomach, and spreads amongst all these folds. I have there found it very frequently parched, and almost withered, in many sheep which I have dissected.

This aliment, after being ruminated, receives, in the third stomach of the sheep and of other animals that chew the cud, a preparation of digestion, which latter takes place only in the fourth stomach. The aliment is dry in the third stomach, not only when the animal is fed solely upon dry meat, which has not furnished sufficient liquid, but also when attacked by some disease causing too great heat, and, consequently, too great evaporation of the liquids necessary to digestion. In these two cases, bad digestion, and the evils attending it, may be prevented, by giving some green food at least once a day. At all times when the ground is not covered with snow, sheep find upon it sufficient fresh food to render it unnecessary to give them any in the rack with their dry meat, in a bad season. I have often stopped in the midst of a flock, in fields covered with snow, where no grass whatever was to be seen. The sheep, however, having their eyes nearer to the ground, perceived the points of some leaves, and scratched with their feet to find more of the plant; they then seized it with their teeth and sometimes pulled up the roots along with the leaves. But when the snow entirely covers the ground to a certain thickness, there is no other resource than in the plants which may be high enough to enable the sheep easily to remove the snow which covers them.

There are some kinds of cabbages, such as the fringed cabbage, which are very tall; they resist the frost, and their leaves contain much juice. These form an indifferent article of food for sheep in times when they are not reduced to dry meat; but, if confined to this aliment, a few of the leaves of these plants will be found sufficient to obviate its prejudicial effects.

It is difficult to have a quantity of these cabbages sufficient for numerous flocks.—They require to be sown, transplanted, and watered for many days; and this culture must be repeated every year, which is too tedious and expensive for the husbandman.

Whatever advantages may attend the use of cabbage as a diet for sheep, I would not recommend this vegetable as fodder, had I not met with a species of cabbage which may be reared without sowing, without transplanting or watering. It is equally unknown to the naturalist and the agriculturist. Like the fringed cabbage, it resists the frost; and, for cattle, is preferable to it, being very easily cultivated. It may be propagated by cuttings; and it is only necessary to slip off its lateral branches, which are numerous, and plant them in the earth, to have, in a short time, new plants over the whole extent of a well cultivated field. The leaves are less than those of other cabbages; but the juice they contain is as abundant; they are equally good food for the shepherd and his flock.—Some handfuls of these leaves given to a sheep will correct the bad effects of dry food.

The regimen of sheep is one of the most important branches of veterinary medicine.—The science is to be established only by well-founded experience, with observation and experiment frequently repeated on these animals. An intimate acquaintance with them in their natural state is necessary, before attempting to cure their diseases.

Girls in humble life should be instructed in preference to boys; because on becoming parents they would instruct their children; labouring men are in general too much fatigued to pay much attention to this point, when their daily task is over.

Experiments with Salt, as a Manure, and in the feeding of Live-stock.

REPORT

By Mr. Andrew Robertson, to the H. S. of Scotland.

I deferred sending an account of my experiments with Salt, till they were completed, and the result fully ascertained, that I might neither deceive myself, nor be the means of misleading others. I have paid all attention in my power to be as correct as possible.

This being a very dry season was rather against the trials; a wet season would probably have answered better; but the real state of this year's experiments is as follows.

Experiment, No. 1.—1*st November* 1818—Sowed 28lb. of marine salt on 3 falls of sandy land, together with wheat, and ploughed both down. This is at the rate of 26 bushels per Scotch acre. The wheat for some weeks after brairding or appearing above ground, did not look so well as the rest of the field around it; I think owing to the salt and the wheat coming into immediate contact. The crop was reaped on the 27th of August 1819, and produced at the rate of about 3 firlots per acre more than the rest around it. The whole field was much hurt by the mildew, and even where the salt was sown, it was not free from it, though not half so much injured as the rest. I think it would have been better to have ploughed down the wheat and harrowed in the salt, instead of sowing it with the wheat.*

Experiment, No. 2—30*th March*, 1819—Sowed 21lb. of rock-salt, or at the rate of 40 bushels per acre, on 1½ falls of excellent young clover and rye-grass, intended for hay. In a few days after, the clover in a great measure disappeared, and although there are some plants remaining, it is far from being like the rest of the field around it. I think that this has been an over-dose, and that the salt ought to have been mixed with earth, and used as a top dressing. I am inclined to be of opinion, from this experiment, that salt sown at this rate, or upwards, may be of great use to clean foul land from weeds, provided the salt is sown in time to let the war betwen it and the weeds be over, so that the grain may enter into a fertile field, and get peaceable possession.

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* It is ascertained, that salt may be sown with oat seed, this grain being covered with a husk; but it would seem that the seed of wheat is too tender to be mixed with salt.

Experiment, No. 3.—*30th March*, 1819—Sowed seven acres of land with oats. One end of the ridges was of a sandy quality; the other half of the length of the ridges was more of a gravelly nature. The whole was half harrowed; then twenty-five bushels of rock-salt were sown on four ridges, or 146 falls, in the middle of the field; this was at the rate of twenty-eight bushels per Scotch acre.

Experiment, No. 4.—Then sowed 9lb. additional, on two falls at the end of one of the above four ridges, to make it at the rate of forty bushels per acre.

Experiment, No. 5.—Sowed also 9lb. on four falls at the end of another of the said four ridges, to make it at the rate of thirty-four bushels per acre. The salt was suffered to remain for three or four days, that it might be melted. It happened to get a gentle shower of rain in the interval; I then harrowed thoroughly the whole land that had been salted. The salt had an equal effect on both ends of the ridges. There was not any great difference between Nos. 3, 4, and 5. At any rate, the largest quantity did not seem to have done any harm. The first alteration we observed was, that not one-third part of skellochs or wild mustard were to be found on the four salted ridges as on the rest contiguous. When the oats appeared, the salted oats were observed to be a few days earlier, and more close on the ground. When cut down (23d August,) the salted oats were more evenly ripened and whiter in the colour, and the stubbles were also whiter. The produce of the four ridges was twenty-nine threaves eighteen sheaves, which gave eight bolls two firlots and two pecks, Stirlingshire measure; and it weighed fifteen stone fifteen pound and four ounces per boll.†

Experiment, No. 6.—The produces of four ridges that got no salt, two on each side of the salted ones, of the same length and breadth, was twenty-seven threaves, and they yielded six bolls three firlots and three pecks weighing fifteen stone seven pound eight ounces per boll, which is seven pound twelve ounces lighter than Nos. three, four, and five.

Experiment, No. 7—*1st April.*—Sowed thirteen and one-half bushels of salt on nine ridges, or one acre one rood and three falls of land, after being harrowed, and prepared for flax-seed. The salt was dissolved before the seed was sown.

Experiment, No. 8—*8th April.*—Sowed seven bushels of salt, after sowing the flax-seed, on seven ridges, or one acre and twenty falls. The end of one ridge got a double quantity of salt compared to the rest, and was in proportion better. There were in all five acres and twenty falls sown, and, according to my own opinion, and that of three other experienced farmers, whose names are annexed, No. 7 was one-fourth, and No. 8 one fifth better than the rest of the ridges contiguous to them. The difference could be calculated in no other way: because, by watering in different holes, both the quantity and the quality are sometimes altered. I should have mentioned, that half of the length of the ridges consisted of strong clay the other half was more loamy. The salt had an equal effect on both descriptions of soil.†

Experiment, No. 9.—About the 1st of May an eight-acre field was dunged, at the rate of forty solid yards per acre of moss and dung, in equal proportions, fermented properly according to Lord Meadowbank's method; and after being carefully and regularly spread, the whole field was ploughed, and every second furrow planted with potatoes. On the eighth of May fifty-four bushels of salt were sown on three acres in the middle portion of the field, the west side of which was rather the thickest. The salt lay melting for 14 days, and then the whole field got a single tine of the harrows, for 3 successive days. The middle portion that got the salt always appeared greener than the rest of field; so much so, that after the potatoes were earthed up, that portion could easily be distinguished, at a mile's distance, when standing in the line of the rows. The crop was taken up about the 20th of October.—The three Scotch acres that were salted produced 131 bolls and three firlots, Stirlingshire measure; 1½ acre on the east side, and the same quantity of land on the west side of the three salted acres were taken up, and yielded only 120 bolls 2 firlots of the same measure. The balance in favour of the salted consequently was 11 bolls one firlot. My neighbours foretold that the potatoes produced on the salted land would be black as peat with the scab; but I am happy to state, that though they are a little scabbed, they are not so much injured as those where no salt had been applied. As this was only the fifth crop since the field had got eighty solid yards of shell-marl per Scotch acre, that may have occasioned the scabbiness. I do not believe, if lime had been applied at the same season of the year, that it would have had the same good effect.

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† Reckoning 16 lb. to the stone, as common in many parts of Scotland; the English or avoirdupois only 14lb.

† It would appear that salt is always of use where the seed, like that of flax, is of an oily quality.

Experiment, No. 10.—14*th May.*—Sowed nine bushels of rock-salt on five ridges or 108 falls, that had been sown with barley and half harrowed; they were then fully harrowed. This was at the rate of thirteen bushels per Scotch acre. The barley on these five ridges did not look so well after it came up, being more whitened in the colour than on the rest of the ridges on each side of them: and this continued until the first or second week of July, when they recovered, after getting some rain in the last week of June. When harvested, the produce was eight threaves, yielding six bolls and three pecks of barley, weighing eighteen stones and one half pound Dutch weight per boll, Stirlingshire measure.

Experiment, No. 11.—Five ridges contiguous to the above, and exactly the same length and breadth, gave just five bolls and one peck of the very same weight, but deficient in quantity to the amount of one boll and two pecks. Where the salt was applied, the barley was a shade whiter when cut down. The stubbles were considerably whiter insomuch, that they could be distinguished at half a mile's distance, when in the line of the ridges.

Experiment, No, 12.—4*th June.*—Sowed five bushels of salt on nine drills, before made up for turnips. Dunged seven of these drills the same as the rest of the field, on each side of them. The other two got no dung; and one drill along side of them got neither dung nor salt. It can just be said, that the salted drills were better than the unsalted, and that is all. Owing to the dry season, it was surprising to see how little difference there was between the drills that got no dung, and the rest quite contiguous that got forty solid yards of well fermented moss and dung, in equal portions.

(To be continued.)

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt*
Oats	...	0	10½	–	0	11½	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	4	–	0	7	*pr lb.*
Mutton	...	0	4	–	0	7	
Veal	...	6	6	–	0	10	
Flax undressed		30	0	–	55	0	*pr cwt*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	3	0	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	40	0	–	60	0	*pr cwt.*
Pork	..	40	0	–	44	0	*pr cwt.*

☞ The Corresponding Committee having inspected the Accounts relating to the Magazine, according to a resolution entered into at the last General Meeting, find that several subscriptions remain still unpaid.—The Committee request that all such outstanding debts may be discharged, without delay, in order to enable them to make out their Report.

☞ Numerous applications have been made for the Magazine, and all the impression already printed having been sold, a second Edition of the first and second volumes will shortly be published. Gentlemen who wish for copies will have the goodness to leave their names with the Secretary, or at the Printer's, as soon as convenient, as it is desirable to know what number might be disposed of.

☞ Orders and communications for the North West of Ireland Society Magazine, to be addressed to the Secretary, under cover to the Rt. Hon. Sir G. F. Hill, Bart. in the following manner:—

North West Society.

Rt. Hon. Sir G. F. Hill, Bt. V. President,
Londonderry.

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reasonable terms.

N. W. SOCIETY'S MAGAZINE.

VOL. III.—NO. 22. WEDNESDAY, APRIL 20, 1825. Price 2d.

NORTH WEST SOCIETY
OF
IRELAND.

At the Half-yearly General Meeting of the N. W. Society, held at the King's Arms, Londonderry, 14th April, 1825;

AS. SINCLAIR, Esq. Vice-President, in the Chair.

The following ordinary members have been admitted since last meeting:—

Edward Moore, Esq. Bawn.
James Alexander, Esq. Somerhill, Tunbridge.

A letter from William Gregory, Esq. Secretary to the Lord Lieutenant, addressed to he Lord Bishop of Derry, acquainting his Lordship of his Excellency's consent to grant a Charter to the Society being read,

Resolved—That thanks be returned to his Lordship for the trouble he has taken in procuring his Excellency's sanction to the measure.

A letter from John Tredennick, Esq. being read, relative to forming a Branch at Ballyshannon,

Resolved—That the Corresponding Committee communicate with Mr. Tredennick, to ascertain the intentions of the gentlemen of that neighbourhood.

The subject of Sir J. J. Burgoyne's letter deferred until the consideration of premiums to be granted to the Branches, at the next September Meeting.

Resolved—That the General Meeting of the Society in Autumn, be held in future on the Thursday next following the 20th September, in each year. That the General Show of Cattle, &c. is to take place on the Wednesday, and that the Committee meet on the Tuesday preceding.

Resolved unanimously—That the non-resident members of the Society be in future at liberty to challenge the cups of the Society, provided the articles on which they are granted be completely complied with, and it be fully proved that the females served are the property of residents in the North West District.

Resolved—That to procure a Botanist and Mineralogist, to assist Mr. Graham to complete the Statistical Survey of the distri a sum of £100 be placed at the dispo of the following Committee, viz.—Rev. E ward Bowen, John Fenton, Esq. and Robert Ferguson.

Resolved—That a General Meeting of the Subscribers to the establishment of the Seminary at Fallowlea, (Grocers' Hall,) be called for Wednesday, the 4th May next, to make the necessary arrangements for carrying the object into execution without delay; and that circular letters be written to each Subscriber, acquainting him of the meeting.

Resolved—That the publication of the present North West Magazine do cease at the end of the present half year, and that Sir Robert Ferguson, Bart. John Fenton and Wm. Miller, Esqrs. be a Committee to communicate with Mr. Mossom Hempton, and make arrangements for publishing such a weekly paper as contemplated in the proposal now read from him. And that the Secretary of Branches be furnished with a list of debts due, and be requested to collect and remit same.

Resolved—That the sum of £50 be placed at the disposal of Charles Rea, Esq. and Colonel Knox, for the purpose of assisting in removing the Rock at Doaghbeg, near the point of Fanett, now very dangerous to fishing boats, and a general obstruction to the fisheries on that coast. And that the Secretary communicate this resolution to Lord Leitrim, and request his assistance to accomplish the object.

Resolved—That the sum of £10 be paid to Mrs. Birch, for the use of the Rooms in which the Society have been hitherto accommodated.

Notice was given that a motion would be made at the next General Meeting, for the purpose of granting Premiums, and establishing a Show of fat Cattle, springing Cows, and Pigs, to take place at the future Spring Meetings; also, for changing the day of the April Meeting, so as to meet the Fair Day of Derry.

Yearly Subscribers to the N. W. Society.

Aberdeen, Marquis of	...	£50	0	0
Armstrong, General	...	1	5	3
Alexander, J. D.	...	2	5	6
Auchinleck, Mr.	...	1	5	3
Auchinleck, James	...	1	5	3
Alexander, Alexander	...	1	5	3
Alexander, John, Caw,	...	1	5	3
Ash, William Hamilton	...	1	5	3
Acheson, James	...	1	5	3
Alexander, Leslie	...	2	5	6
Blessington, Earl of	...	10	0	0
Bateson, Sir Robert, Bart.		10	0	0
Bruce, Sir James	—	5	13	9
Beresford, Lord George	—	5	0	0
Bateson, Robert	—	5	0	0
Burgoyne, Sir John	—	2	5	6
Bowen, Rev. Edward	—	2	5	6
Ball, Rev. R. —	—	2	5	6
Ball, James C.	—	1	5	3
Ball, A. S. —	—	1	5	3
Beresford, Barre	—	1	5	6
Brownlow, Rev. Francis	—	1	5	3
Boyd, William	—	1	5	3
Babington, Richard	—	1	5	3
Brassington, Rev. Richard		1	5	3
Brown, J. Comber,	—	1	5	3
Bennett, Stephen	—	1	5	3
Babington, David	—	1	5	3
Boyle, John	—	1	5	3
Boyd, Rev. William	—	1	5	3
Boyd, Alexander	—	1	5	3
Boyd, John —	—	1	5	3
Brook, Thomas	—	1	5	3
Beresford, J. C.	—	1	5	3
Bing, Robert	—	1	5	3
Branson, Thomas	—	1	5	3
Bruce, Stewart	—	1	5	3
Belmore, Earl of	—			
Bamber, George	—	1	5	3
Bailey, —— —	—	1	5	3
Caledon Branch	—	20	10	6
Corporation of Londonderry		20	0	0
Caledon, Lord —	—	10	0	0
Cailey, Sir George, Bart. Brompton, Yorkshire,	—	5	0	0
Cromie, John —	—	4	5	9
Conolly, Colonel	—	2	5	6
Conyngham, W. L.	—	2	0	0
Cary, Rev. A. G.	—	1	5	5

Crawford, Jones	—	1	5
Crigan, Rev. C.	—	1	2
Carey, Robert	—	1	2
Caulfield, Lieutenant Colonel		1	5
Carmalt, Thomas	—	1	5
Cochran, John	—	1	5
Coningham, Lord	—	1	5
Courtney, James, Glenbeen		1	5
Chambers, Daniel	—	1	5
Curry, John, Derry,	—	1	5
Curry, William	—	1	5
Castlestewart, Lord	—	1	10
Campbell, Alexander	—	1	5
Chichester, Sir Arthur	—		
Derry, Bishop of	—	50	0
Drapers' Company	—	30	0
Dawson, George Robert	—	10	0
Delap, Samuel	—	2	5
Dysart, John	—	1	5
Dysart, William	—		
Davenport, William	—	1	5
Eccles, John Dickson, Fintona,		1	5
Edwards, Hugh Gore	—		
Fishmongers' Company	—	10	0
Ferguson, Sir Robert	—	5	13
Ferguson, Andrew	—	2	5
Fenton, John	—	1	5
Fulton, James	—	1	5
Fyffe, Mr. Baron's Court,		1	5
Grocers' Company,	—	10	0
Gough Thomas B. Dean of Derry,		10	0
Gervais, Rev. Francis	—	3	8
Galbraith, Sir James	—	5	0
Gage, Conolly	—	2	5
Goulding, George, Caledon		1	5
Gouldsbury Rev. F.	—	1	5
Galbraith, Samuel	—	1	5
Grierson, ———	—	1	5
Gilmour, Patrick	—	1	5
Gibson, Major	—	1	2
Hill, Sir G. F.	—	10	0
Hayes, Sir Samuel	—	5	13
Hart. General —	—	5	13
Harvey, John, Malin Hall,		5	5
Hamilton, John, Brownhall,		5	0
Hay, Rev. G. —	—	1	5
Harvey, Richard	—	1	5

ll, M. S. — —	1	5	3
inter, Henry —	1	5	3
nter, Richard —	1	5	3
ey, Mr. Raphoe, —	1	5	3
rvey, John —	1	5	3
man, Rev. George —	1	5	3
tton, Mr. Grange —	1	5	3
milton, Rev. S. —	1	5	3
milton, A. C. —	5	0	0
milton, Rev. W. —	1	5	3
milton, James —			
land, H. J. —			
milton, Rev. Richard —	1	5	3
rvey, John Redford, Goory,	1	5	3
h Society, —	10	0	0
Do. donation, —	10	0	0
ine, Henry —	2	5	6
es, Rev. James —	2	5	6
nston, Mr. Knappa, —	1	10	0
nston, Joseph —	1	10	0
nston, John —	1	10	0
ox, Rev. J. S. —	3	0	0
ox, Rev. William —	2	5	6
ox, Andrew —	1	5	6
ox, Rev. James —	1	5	3
nedy, William P. —	1	5	3
ox, George —	1	5	3
donderry, Marquis of	50	0	0
hton, Sir John —	5	13	9
drum, Mr. —	2	5	6
, Hugh, Oaks, —	1	5	3
, Hugh, Coleraine, —	1	5	3
ky, C. M‘C. —	1	5	3
, Rev. Samuel —	1	5	3
, James — —	1	5	3
, Acheson — —	1	5	3
ry, James — —			
cers' Company —	10	16	8
tgomery, Mr. Convoy,	3	8	3
tgomery, Mr. Convoy in addi- on,	2	3	0
er, William —	2	11	9
tgomery, John, Benvarden	2	5	6
well, Rev. P. B. —	2	5	6
tgomery, Rev. Alexander	2	5	6
well R. W. —	2	5	6
tray, Mr. —	2	5	6
re, Edward Aughnacloy	1	5	3
dock, William —	1	5	3
sfield, Francis —	1	5	3

Mansfield, Johnston —	1	5	3
Montgomery, Robert jun. —	1	5	3
Murray, John —	1	5	3
Maxwell Mrs. —	1	5	3
Mansfield, Rev. Mr. —	1	5	3
Major, James —	1	5	3
Miller, Robert —	1	5	3
Maxwell, Robert —	1	5	3
Maginniss, Sir John —	1	5	3
Monsell, Archdeacon —	1	5	3
Miller, Captain —	1	5	3
Major, Samuel —	1	5	3
Mansfield, Ralph —	1	5	3
Montgomery. Rev. S. —	1	5	3
Mauleverer, Rev. W. —	1	3	3
M‘Mahon, Rt. Hon. Sir William	2	5	6
M‘Causland, Marcus Fruit Hill,	2	5	6
Macartney, George, Lisanore,	2	5	3
M‘Clellan, Cary —	1	5	3
M‘Crea, Robert, Glenville,	1	5	3
M‘Causland, Marcus, Culmore,	1	5	3
M‘Crea, Robert Grange,	1	5	3
M‘Crea, James —	1	5	3
Magill, James, Fairview,	1	5	3
Moore, Rev. William —	1	5	3
Nesbitt, James —	2	5	6
Nesbitt, Rev. C. —			
Ogilby, Robert —	20	0	0
Ormsby, Rev. Mr. —	1	5	10
O'Neil, Edmund —	1	5	3
Orr, Mr. Salem, —	1	5	3
Orr, Samuel — —	1	5	3
Orr, William, Strabane, —	1	5	3
Perry, George —	1	5	6
Porter, Rev. George, Enniskillen,	1	5	3
Patterson, Thomas —	1	5	0
Quin, John, Campsey, —	1	5	3
Raphoe, Bishop of —	10	0	0
Richardson, Mr. —	5	13	9
Richards, J. B. London,	5	0	0
Rea, Charles —	1	5	3
Robinson, Rev. W. —	1	5	3
Rogan, Doctor —	1	5	3
Rea, John —	1	5	0
Richardson, W. S. —	1	5	0
Smyth, Henry, Drapers' Company	11	7	6
Stewart, A. R. Ards —	10	0	0

Sinclair, James	5	13	9
Staples, Thomas	5	13	9
Stewart, Colonel Killymoon,	5	13	9
Stewart, Sir James	5	13	9
Stewart, Sir John	5	0	0
Smyth, J. A.	3	0	0
Style, Sir Charles	2	5	6
Speer, John	2	5	6
Scott, Thomas Willsbro'	2	5	6
Stewart, Henry	2	5	6
Stewart, William, Hornhead	1	14	1½
Stevenson, John	1	5	3
Stratton, Mr.	1	5	3
Stewart, James Major	1	5	3
Scott, Rev. Mr.	1	5	3
Skipton, Captain	1	5	3
Smyth, Captain	1	5	3
Sampson, J. George	1	5	3
Smith, C. M.	1	5	3
Stirling, James	1	5	0
Staples, J. M.	1	5	3
Stewart, Rev. R.	1	5	3
Stack, Rev. T.	1	5	4
Sampson, Rev. G. V.	1	5	3
Smyth, W. L.	1	5	3
Stuart, Rev. H.	1	5	3
Smyth, James	1	5	3
Stewart, Hon. A.	1	10	0
Story, Rev. J. B.	1	5	3
Smyth, Robert	1	5	3
Smyth, Ross T.	1	5	3
Scott, Andrew	1	5	0
Storey, J. H.	1	5	3
Smith, William, 18, Fitzwilliam Square, Dublin,	1	5	3
Torrens, Robert	5	13	9
Tredennick, John	1	10	0
Todd, Daniel			
Usher, Archdeacon	1	5	3
Vesy, Rev. G.			
Wicklow, Lord	20	0	0
Waterford, Lord	50	0	0
Walker, Henry	1	5	3
Warren, William	1	5	3
Woore, Thomas	1	5	3
Wray, G. A.	1	5	3
Wright, Samuel	1	5	3
Watt, Andrew A.	1	5	3
Wallen, Alexander	1	5	3
Williams, Sir William	1	5	3
Young, George	2	10	0
Young, Rev. John	1	5	3
Young, Major	1	5	3

HONORARY MEMBERS.

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ON PLOUGHING.

(From the General Report of Scotland.)

The great difficulty in ploughing is, to determine the width and depth of the furrow-slice, which must vary according to the objec the farmer has in view, the nature of the preceding and succeeding crops, and the quality and depth of the soil. The general rules regarding this subjeet are, to give the furrow for fallow or turnips as deep as possible, bu after the turnips are eaten on the ground, very shallow furrow is to be preserved. After dung, the furrow must be sufficient t cover it. After lime it cannot be too shallow

The depth of ploughing must in a grea measure, be regulated by the soil to be worked. On thin soils, more especially on a rock substratum, ploughing must necessarily b shallow, but where the soil is of a sufficien depth, it is material to give a substantial furrow at the commencement of a rotation, an afterwards to vary the depth, according to th different crops intended to be raised. If summer fallows are not ploughed deep enough when they receive the first furrow, it is b some considered to be impracticable in a dr season, to go to a sufficient depth afterward though it is desirable not to go deeper, tha is requisite to clear the soil of every description of root-weeds. Yet some people ploug shallow at first, and after cleaning the so thus turned up of root-weeds go to the u most depth they intend with the next fur an clean the remainder.

In regard to the advantages of deep ploughing (a most important branch of husbandry) they are thus detailed in a late publication—1, By bringing up new mould, deep ploughing is peculiarly favourable to the growth of clover, turnips, beans, potatoes; and indeed without that advantage, these crops must diminish in quantity, quality, and value; 2, Deep ploughing is of infinite consequence, not only by furnishing more pasture to the roots of the plants, but above all, by preventing the consequences of either too wet, or too dry a season. This is a most important consideration; for if the season be wet there is a greater depth of soil for absorbing the moisture, so that the plants are not likely to have their roots immersed in water; and in a dry season it is still more useful, for in the lower part of cultivated soil, there is a *reservoir of moisture*, which is brought up to the roots of the plants, by the evaporation which the sun occasions; 3, By deep ploughing, also the ground may be more effectually cleaned of weeds of every description; 4, Animal and vegetable manures, which have such a tendency to rise to the surface, are properly covered, which is not the case with shallow ploughing, in consequence of which much of the value of such manures is lost; 5, An intelligent farmer, after pointing out that deep ploughing increases the staple of the soil, keeps the roots of the grain from being injured by wetness, and likewise enables the crop longer to resist drought, adds, I have ever found deep ploughing attended with good crops, when ridges shallow ploughed, in the same field, were but indifferent; a decisive proof in favour of deep ploughing.

Of different kinds of ridges. There are various ways of forming these. 1, On dry land, the plits of each ridge are sometimes laid all in one direction, while those of the adjoining ridge are turned the contrary way. This is termed *casting*. 2, On what may be termed middle soils, the ridges are split out, in which way the crown of the old ridge becomes the furrow of the new one. This mode of ploughing is technically named ridge and furrow, or *crown and furr*. 3, It is indispensably necessary, on all strong soils, to form the ridges by twice gathering all the furrow-slices, inwards, in the direction of crown: but in this case all the ridges are continually preserved in their original situation, the inter-furrows in the same places. 4, When breaking up these twice gathered ridges, for being afterwards worked as summer fallow, it is customary to split or *cleave* them down, reversely to the former operation, by turning all the furrow-slices outwards, beginning at the furrows, and ending at the crowns. In this operation the ridges are all reduced to half their original breadth; the old water-furrows are carefully opened up, to serve as surface drains, and an additional intermediate series of water-furrows are formed at the cloven crowns. 5, In former days, land intended for barley next year, was often thrown up after harvest, into a species of one-bout ridgelets or drills, leaving a slip of fast land unploughed in the heart of each, covered up by the two ploughed plits. This old-fashioned mode of half-ploughing was termed *ribbing*, or *rice-baulking*, and is now rarely met with in well cultivated districts.

When working summer fallows, or reducing turnip-land to fine tilth, *cross* ploughing is indispensably necessary to pulverise the soil, both for the sake of effectual tillage, and for enabling the industrious husbandman to remove the roots of weeds.

On ploughing steep-land.—In certain cases the surface is too steep to admit of the above methods. On these occasions some husbandmen, from a desire to have their ridges directly up and down hill draw all the furrows down hill, and drag the plough up the hill empty. But it is a much better plan to form the ridges in a diagonal or slanting direction; by which if done judiciously the up-hill draught is rendered moderately easy to the horses; and in this way also the surface soil is not nearly so apt to be injured and run off, by the rapid descent of rain-water in the furrows, which will often burrow the soil and sand up the furrows at the bottom of the hill, when the ridges are formed directly up and down-hill. Crossploughing, in such situations is readily accomplished by reversing the diagonal.

On extremely steep land, it is necessary to plough almost directly across the hill, turning all the furrow-slices downwards; and in doing this with the ordinary plough, it is necessary to carry the plough back again empty in the open furrow. When there is a considerable extent of such steep land to cultivate, it is better to have a plough made expressly for the purpose, having a mould-board that will shift to either side, called a *turn-wrest* plough, by which much time and labour are saved, and a great waste of labour avoided.

When other circumstances admit of it the best direction for the ridges is N. and S. that the grain on both sides may enjoy equal advantage from the influence of the sun; but this must be often regulated by the slope of the field, or the direction of the fences.

Of Water furrows.—If there be any hollows of wet places, from which the surface water cannot readily drain off by the ordinary water-furrows between the ridges, an oblique or a winding furrow, according to circumstances, is drawn across the finished ridges, in the most convenient direction for carrying off the water, which is called a *gaw-furrow.* Lastly, all the intersections of the furrows are carefully opened up into each other, by the diligent use of the spade and shovel; and if necessary surface drains are cut across the head-ridge at the bottom of the field, in convenient places, that none may stagnate in any part of the field. This implies the necessity of fence ditches being always kept scoured and open, for the ready conveyance of water from every part of the farm.

After a field is harrowed, by which the inter-furrows, gaw-furrows, and cross drains must be more or less filled up, every one of these must be carefully opened again with the plough, followed by the diligent use of the spade and shovel. In fact under no circumstance of husbandry, independent of improvements which do not fall under this head, is the difference between good and bad management more eminently conspicuous, than in the perfection with which arable land of a strong retentive soil and sub-soil, is surface-drained. The attentions become peculiarly necessary on the commencement of a thaw, after a storm of snow, indeed gaw-furrows require to be continually looked after, during the whole course of the year, as nothing injures land more than the lodgment of water on its surface.

Extent ploughed in a day.—This must vary under different circumstances. A day's work (darg) on heavy soils consists in general of nine hours' actual work, five hours of which are in the forenoon, and four in the afternoon; but on light soils the horses are worked ten hours. Supposing an English acre to be ploughed in regular slices of nine inches in each breadth, the whole series of slices will extend to 19360 yards in length, and allowing for the ground travelled over in turning, the whole work of an acre may be estimated at eleven miles and nearly five furlongs.

In the strongest lands, and under the most unfavourable circumstances where ploughing is advisable, all extraordinary obstacles to tillage being removed, a pair of good and well fed horses ought to plough three quarters of an acre, in one day of nine hours' continuance. In the subsequent ploughing of a summer fallow at the full depth, one acre may be easily ploughed in a day.—When the land is reduced to fine tilth, and when the plough is used to give the seed furrow, by a shallow slice of four inches or a little more, an acre and a quarter may be accomplished. In the winter, only a single journey or yoking of six hours is sometimes taken, in which time half an acre may be ploughed with tolerable ease. From these premises, 1 acre may be considered as a full average for a day's work throughout the year.

HORTICULTURE.

The following is the most *approved rotation* of crops for one year, adopted by the market gardeners near Edinburgh. These rotations may be considered as calculated for a number of successive years, with very little variation.

1. Early potatoes of the most approved kinds, are planted in March and April.—These are generally cleared off in June or the beginning of July; and the ground is then sown with yellow turnip for autumn and winter use, or planted with cauliflower and green savoys for autumn and winter, or it is well prepared, dunged, and trenched, and planted with celery, in ridges or in beds from four to six feet wide; to be sold in winter and spring.

2. Early peas are sown in December, January, February or March. If the season

prove favourable, these peas are sometimes ready for the market in June and July.—Green savoys and German greens are sometimes planted in the spring, between the rows of peas, and remain for the crop after the straw is carried off the ground; such savoys generally grow very large and cabbage hearted, and are the first brought to market in the autumn months, when they meet with a ready sale. Radishes, cresses, and spinage are sometimes also sown between the rows of early peas; but after the earliest radishes have been drawn, and the cresses and spinage once or twice cut, all are hoed down, that the peas may be properly ridged up, so that the earth may support them. Early dwarf, York sugar-loaf, large early Scotch and red cabbages, green savoys, German greens, red curled greens, and occasionally Brussels' sprouts, are sown in August to supply the market the ensuing spring, on the ground from which early peas or potatoes have been taken. Cauliflower is sown in a sheltered situation; the seedlings are afterwards planted very thick in a hot bed frame on the ground, without any dung, it being merely wished to preserve them from the winter's frost; or they are sometimes tried on a sheltered warm border, where however during severe weather, they require a temporary covering of mats.

3. Early turnip sown in March and April are ready in June and July. The ground being then well manured and prepared is very commonly planted with Scotch leeks for winter and spring use; or, sometimes onions to stand the winter are sown; and also lettuce and spinage for winter and spring use.

4. Early cabbage planted out in October, November and February are cut in May and June. The ground is then either planted with cauliflower for autumn use, or sown down with yellow turnip to be drawn in August and September for market, or to be housed and pitted in October.

5. Late cabbage are planted in March, April, and May; and cut from October to April.

6. Carrots of the early horn and orange sorts are sown in March and April. The horn carrots are drawn in June and July.—The orange in July, August, September and October, after which they are pitted for winter and spring. The ground is then properly manured and dug, and planted with early cabbage; or it is ridged up to be benefited by the frost, and in March pointed and sown with onions.

7. Beans of all sorts are planted in March and April, and pulled in July, August, and September. The first cleared ground is planted with green savoys and German greens; the rest is ridged against winter.

Red beet for pickling, is sown in drills in April and May, and is ready in October and November.

Cucumbers in the open ground are sown in drills in May and June, and sold in the market for pickling in August and September.

Lettuce and radishes are frequently sown among summer onions; the former is also sometimes sown among winter onions.

STRAWBERRIES.

Their cultivation is attended with a good deal of expense requiring much labour, manure, and continued assiduity in digging between the plants, clearing them of weeds, cutting off runners and leaves, watering and picking the berries. They may be continued on the same land for any length of time, provided the plants be renewed every four or five years. These plants are usually set in rows, about two feet asunder, and 15 or 18 inches between each other in the row. Plantations are made either in September, or in the end of March or beginning of April, the soil being trenched, or at least deeply dug and well manured. When the weather is dry they are carefully watered every day, till they be well established. In May the runners are cut away, a practice which is found to promote the swelling of the fruit. Every stool is rendered quite distinct from another, and the earth between them is stirred up with the hoe. A similar operation is repeated in October.—In the very dry season of Summer strawberries are watered, not only when in flower, and when the fruit is setting, but even when it is swelling off; but the moment the berries begin to colour, watering is desisted from, lest the flavour should be injured.

GENERAL REPORT *of* SCOTLAND.

The fifth chapter of this most useful work describes the principal agricultural implements generally used in the improved parts of Scotland, and concludes with observations on—1, The materials of which those implements are made; 2, The means of preserving and repairing them; 3, The means of improving their construction. The author of this chapter is Mr. Andrew Gray. A few extracts from the concluding section are presented to our readers. "Whatever kind of wood may be thought most proper (for farming implements) it should be of the very best quality, well seasoned, and perfectly dry when joined together. The different parts ought to be well fastened together; they should also be well finished, or properly cleaned off, and carefully laid up."

As some parts of these machines may receive damage unperceived, their several parts should be minutely inspected at times; and when any part is observed in the least damaged, or in danger of giving way, it should be immediately repaired; otherwise the fabric of the whole implement may, by a small neglect, be destroyed; by which means considerable loss and inconvenience may be incurred. There is another thing deserving of particular notice—any implement that is not wanted for use during the season, should be carefully laid up; but before laying it aside, it ought to be well cleaned, perfectly dry, quite entire, and ready for use when necessary. Upon every faam there should be one or more places or offices, for holding these implements; a cart-house or shade for keeping ploughs, carts, harrows, rollers, &c. is now a very common house on most farms—for the smaller tools, some less exposed and secure place must be requisite. Those machines that are exposed in the fields, would require to be new painted at least every two years, which defends them not only from the drought, but from the rain.

3. On the means of improvement. The implements of husbandry may no doubt be best improved in consequence of minute observation, and by experiments carefully made; for though many new invented models have been presented to the public, yet before a full trial is made of any implement when of full size, it must always be doubtful whether the invention will prove successful or not. If proper encouragement however were given, persons of genius and experience would devote their time and attention to this most important subject, and exert themselves either in the improvement of old, or in the invention of new implements of a superior description.

Chap. VI. On inclosing land and the nature and advantage of fencing. Part 1st, gives an account of the laws of Scotland, respecting inclosures and the division of property held in common; 2. The advantages of inclosures to proprietors, to farmers, labourers, &c. the proper means to be employed in the inclosing of land, the expenses, &c. 3. Various modes and sizes of inclosures; 4. Fences, gates, and styles.

Chapter VII—On the management of arable land, by Robert Kerr, Esq. extends to 267 pages, and is replenished with most ample and desirable information on this branch of husbandry in Scotland. Some extracts from this chapter have already appeared in this Magazine, and perhaps a few of our subsequent Nos. may be profitably employed in exhibiting somewhat in detail the actual practice of our Scottish neighbours.

CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt*
Oats	...	0	10½	–	0	11½	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	4	–	0	7	*pr lb.*
Mutton	...	0	4	–	0	7	
Veal	...	6	6	–	0	10	
Flax undressed		30	0	–	55	0	*pr cwt*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	3	0	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	40	0	–	60	0	*pr cwt.*
Pork	..	40	0	–	44	0	*pr cwt.*

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N. W. SOCIETY'S MAGAZINE.

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Experiment with Salt as a Manure, and in the feeding of Live-stock.

(Continued from page 168.)

Experiment, No. 13 —4*th July.*—Watered a row of cabbage, and another of greens, with water strongly impregnated with salt, but cannot say that either the one or the other was improved by it. Indeed neither crop was good, owing to the drynes sof the season.

Profit and loss on the Experiments above detailed with the Rock Salt.

Paid for four tons of Rock-salt, as per account,	£4	0	0
Duty on do. as per permit,	20	0	0
Freight from Liverpool,	4	4	0
Tolls, and other trifling expenses,	0	3	0
Crushing and pounding it small, so as to go through a small riddle,	2	0	0
Total,	£30	7	0

SOWN AS UNDER.

Bushels.	Pounds.		Scotch.						
			Acres.	Roods.	Falls.				
...	21	on	...	...	1½	Which nearly destroyed the grass.	£	s.	d.
25	18	...	...	3	26	Oats, and gained 27 pecks, at 21s.	2	0	6
....	...	...	...	...	...	62lb. gain on the above, say	0	5	6
21	...	...	2	1	23	Lint, supposed to gain ten stone at 12s.	6	0	0
54	...	...	3	...	...	Potatoes, gained 11½ bolls at 6s.	3	7	6
13	8	...	...	2	28	Barley, the gain 18 pecks, worth	1	11	6
5	...	...	...	...	30	Turnips, profit but little, say	0	5	0
118	47	...	7	....	28½	Profit on a comparison of products calculated to be, which is about £2 per Scots acre.	13	10	0

"In regard to the expense of the salt, the 118 bushels 47lb. employed in the above experiments, duty included, cost £21 2s. 6d. so that owing to the duty there is a loss of £7 12s. 6d. But as the salt, if free from duty, would have cost only £7 4s. 2d. there would have been a clear profit, if the salt had been duty free, of £6 5s. 10d. or about 18s. per acre, even in this year, though so unfavourable to such experiments.

The Declaration of three intelligent Farmers, certified by John Baird, Esq. a Justice of the Peace.

"*Gibstan, September* 1819.—This is to certify, that we, Walter Scott, farmer in Whitecross, Alexander Scott, farmer in Gibstan, and Henry Reid, farmer in Nicolton, in presence of John Baird, Esq. of Maniel mill, Justice of the Peace, in the shire of Stirling, having met at Almond Myrehead, and carefully examined the different crops on land that had been manured with salt in spring last, on Andrew Robertson's farm; as likewise the crops of the same species on land on each side, of them, which had not been salted: We were jointly of opinion, after inspecting the land on the 17th of August last, that there would be an addition of two bolls more oats per acre; between one-fourth and one-fifth more lint or flax; and ten bolls Stirlingshire measure of more potatoes per acre, where the salt had been applied than where it was not. The barley at that time did not seem so much discernible.

" (Signed) WALTER SCOTT.
ALEXANDER SCOTT.
HENRY REID.
JOHN BAIRD, *J. P.*"

Thus I have paid all the attention in my power during the short time since I got possession of the salt, in the making of these experiments. But still the following particulars remain to be ascertained.

1. What is the largest quantity that may be applied to the different soils with advantage?

2. Will salt raise the usual crop of turnips if properly managed, without the assistance of dung?

3. What is the best mode of using it as a top-dressing for grass-lands? and,

4. For what period of time will it produce benefit to the soil?

1st, With respect to the first question, I have sown by way of experiment from eight to forty bushels per acre at one ploughing, and none of these quantities seemed to be overdone. I therefore think, that where the land is summer fallowed, it may be sown at three different ploughings, twenty bushels at each time. It will thus be properly melted and mixed with the soil before the seed be sown; and it will not be found an over-dose, more especially in deep soils. A man, with ordinary skill, if the ridges are eighteen feet broad, can sow at the rate of twenty bushels per acre, at two casts, or thirty at three, or forty at four casts; the former can be done in one hour and a half by two men.—There is no way that the salt can be so equally applied as sowing it by the hand, and it will be completely incorporated with the soil, if applied in time to be reduced before the grain is sown. A wheat firlot of riddled salt weighs ninty-four pound English.

2d, With respect to the second question, I think that if twenty bushels an acre were sown early in the season, and a few weeks after, when the salt was melted, it was ploughed down; if, in the month of March, other twenty bushels were sown and ploughed down in the same manner; and if, in April, ten bushels more were left to melt as long as convenient, then ploughed down and thoroughly mixed by harrowing, that this would raise the usual crop of turnips (say from thirty to thirty-five tons per acre) without dung.

3d and 4th, With respect to the third and fourth questions I shall not attempt to discuss them at present. But I should engage to answer all these questions more perfectly, and others that may be proposed, if Government would give up the duty on a certain number of tons for making the experiments. I would pay the price of the salt and freig with every other expense myself; so that this respect, all the ends of an experimen farm would be answered, without eit trouble or expense to the public; and wit greater variety of soil and climate than a farm can possess. For, in this case besides own farm, which consists of different soils, brother has a rich low-lying farm or car about 5 miles distant from mine. I have lik wise a friend who has a muirland farm f miles south from me, the half of which is stro clay, there is also a common, just now divid in my neighbourhood. In all these differe situations, I would make any experime that might be recommended to me, as I wi to be a useful member of Society.

In the Feeding of Live Stock.

I was fully satisfied long ago respecti the benefit of giving salt, in moderate qua tities, to horses and black cattle. It was practice, about forty years ago, in this pa of the country, to boil all the light or we corn with a little chaff, and to give it to t work-horses for their supper. My fath possessed a small farm at that time, and p a handful of salt every day in the copp and boiled it with their food to keep t horses clear of the bots. It also cleared t skin. But when a peck of salt cost mo than a peck of meal the practice was given u

Some years ago I was feeding a large so with potatoes, and although we gave her many as she could eat, both in a raw sta and boiled, she was making but little progr in fattening, when a neighbour, who was sk led in feeding stock, said, if I would send t sow to him, with the potatoes that were be given to her, he would take any bet th he would feed her in three or four wee as fat as I could wish her. Accordingl the sow was sent, and I did not see her f three weeks. She was so much improved that time that I hardly knew her; and that he gave her above what she got at hor was some salt-herring brine among the potato

Last winter I was afraid that a Highla cow, kept among the rest in the winteri close, was rotten. In spring, when put grass, she had a flux, or was what we ca '*elfshot.*' I was advised by a person skill those matters, to give her half a pound of aped chalk, in sweet milk, to dry her up, l then give her a small handful of salt ry night. She became very fond of the , and came to the place where she got it ularly every night. She became so tame ast, that she would lick the salt from my id, and fed remarkably well. But for fear her getting ill a second time, I sold her ut a month ago, in good condition, to the cher.

A handfull of salt, mixed with two pecks potatoes, the day before using them, in a at measure prevents cattle from being lled with them. This method will also vent turnips from swelling the cattle, when potatoes do not agree with them.*

have often washed feeding cattle with ter strongly impregnated with salt.— prevents them from mangeing, and makes m content, and feed kindly.

When straw is very dry in the spring nths, let it be strongly impregnated with , and both horses and cattle will devour it edily, after it has lain for some hours in t state. This plan should be tried with se and bean straw, as well as with that m corn.

The way that I consume my chaff and small weak corn, is this; I have a large boiler malleable iron, that boils a morning feed thirty cattle at once, and at night they turnips.

Last winter one-half boll of potatoes was iled in water strongly salted, say to the ount of four or five pounds. The pota-s, when boiled, were taken out from the ler with a ribbed shovel, made on purpose, as to leave the water in the boiler. The iler was now filled half full of light corn turnips, and then filled to the brim with ter and chaff. After being once boiled, it eps warm through the night for the morn- feed to the cattle. In March last two ung three-year old fillies were taken from straw-yard, and put into the stables for ring work. In eight or ten days after they re put on this food they passed a number worms, which we considered to be the ef- ts of the salted potatoes.

The best way of salting hay, in my opinion, is, before cocking, to rake it in what are called windrows; then you strew upon it what quantity of salt you choose, the hay being green and damp to melt it. Then put it in cocks. It will require to stand a day longer in the cocks to dry, owing to the damp occasioned by the salt. To salt hay, in the act of stacking, although it is an advantage to the hay, yet it will not benefit its keeping, as the salt promotes damp.

A respectable gentleman in this neighbourhood, who formerly lived in Canada, and still has an estate there, told me, that in that country they consider salt almost as necessary for cattle as food; and that he himself has seen a score of black cattle around him waiting for it.

Some people argue, that if cattle have been accustomed to get salt regularly, they will not thrive if the salt is taken from them.— But if that should be the case, why not continue it?

ANDREW ROBERTSON.

ON THE VALUE OF MANGEL WURZEL.

(From Evans and Ruffy's Farmers' Journal.)

Sir—As the season is now arrived for beginning to sow the Mangel Wurzel Seed, and to continue sowing through the next month of May, an old practitioner wishes to suggest, through the medium of your Journal, a few hints on the culture of it, which he thinks will be found useful.

And first, always supposing the land clean, then the same quantity of manure should be bestowed as for turnips. Sow from four to five pounds weight per acre. The writer has tried various methods of sowing it, but prefers drilling in the seed on flat work, at twenty-seven inches distance between the rows; that space allows free scope for the hand-hoe to clean the intervals when weeds appear in them. The plants should be set out twelve inches distant in the rows, and if that work is done by the hand several advantages will be derived from it: the best plants may be selected, and the weeds being eradicated, will (in common seasons) render the use of the hand-hoe unnecessary, and thereby it will not be found more costly. These observations will, however, be useless, if care is not taken in sowing the seed, to deposit it the least possible depth in the earth; for, from burying it deep, has arisen disappointment to the farmer, discredit to the seeds-man, and failure of the crop.

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* Query, Would it do the same with fresh clover?

If, at the time of harvest, the roots are gathered, and which should not be retarded beyond the last week in October, lest frost should injure them, a wheat crop may succeed them, and will not be found inferior to any other on the farm; or the land will be in an excellent state of preparation for barley another year. When the roots are used for fatting bullocks, they will be found more nutritious when they have been gathered two months, for stock put up in December for the London spring market, where, the writer hears, Mr. Coke, of Holkham, exhibited this year some prime Devon bullocks, from a crop of fourscore acres.

Some farmers use them for the dairy; but it is doubted by some, whether they tend to increase the quantity of cream and butter in proportion to the Swedish turnip; certainly the flavour they impart to both is sweetly delicious. But it is now their superiority manifests itself above all others of the tribe. They are now become more nutritious from their keeping, (if they have been carefully preserved,) and answering all the purposes of feeding on the farm, when other vegetables have been consumed, or those left on the ground are run to seed. They afford in all seasons a succedaneum to the farmer for his young stock; and when sliced and put into troughs at the fold, flush the milk of the ewe for her lamb; and in a time of drought like the present, the value of the root is incalculable. It is from having a large stock of them on my farm, feeling at this moment their utility and protection against the want (even) of summer pasturage (for they will continue sound and wholesome food until the coming of the next year's crop,) I wish to attract the attention of my brother farmers now, to provide themselves with a crop of the Mangel Wurzel roots, to be partakers, another year of the like benefits and advantages.

I am, Sir,
Your very humble servant,
M. W.

Extracts from Evidence before the Lords.

T. F. Lewis, Esq. M. P.—What observations did you make upon the manufactures in the different parts of the country?

Such observations as I had an opportunity of making in 1823, were in the highest degree satisfactory. An entire change has taken place, in Ireland, as to manufactures. The removal of the protecting duties has produced effects infinitely more beneficial than the most sanguine persons anticipated. At this time, any person in Ireland who can find a loom, and can weave, may be employed; and I have reason to know that the demand in cotton weaving is such, that the persons employing them are willing to pay wages in advance.

To what particular manufacture does your observation extend?—Cotton particularly.

In what parts of the country?

It applies to those in most easy communication with the manufacturing parts of England, and where manufacturing was best understood, that is to the north and east; I should say that commencing at Drogeda, it follows the north-eastern coast to Derry, not spreading, as yet, much into Donegal. The capitalists of England set to work very cautiously. It has been very gratifying to see the prudence and the dexterity with which they have approached their object. Ireland has hands that are able to weave, owing to the linen manufacture. The English manufacturers have begun to send over cotton spun in England to get it woven in Ireland, and it is immediately taken to England to be finished. They risk very little; no large establishments are required; there is nothing that can be destroyed by any sudden act of violence, and they part with it for a very little time—and in this way it is not that in Ireland there is raised what was once attempted, a rival system of manufacture; but it is gradually becoming incorporated in the British system of manufacture; it will form a component part of it, which is, in my view, infinitely more to be desired. There are, indeed, separate establishments which have at the same time increased, those in Belfast have been enlarged; and I was shown, with great triumph, a new one, which was five feet longer than any one in Manchester.

Is the weaving of cotton a cottage manufacture, or conducted in large buildings?

It is not conducted in large buildings where many are collected together, but it seems to be collected in towns. There are many cotton weavers in Drogheda; if I may rely on the information, one person said he had two thousand looms at work. There are agents who are known to be at one town one day, and at another on the following day, bringing with them yarn; they give it out to the weavers; and at a fixed time, a certain quantity of calico is brough back to them, according to the weight of the yarn. I was present at Caledon, county Tyrone, in the office of one of these agents. I was informed it did not diminish the linen manufacture. The linen manufacture has this peculiarity—the weavers buy their own yarn, and sell their web when they have woven it: to a certain degree, therefore, they are capitalists. It requires also stronger men to weave linen than cotton; the class of persons, therefore, employed in weaving calicoes, are both a poorer and a weaker class than those employed in the linen manufacture, and that has been found extremely advantageous to Ireland. The price of a loom is about thirty shillings, and a healthy girl of fifteen, who can obtain a loom, is sufficiently strong to weave.

Has the cotton manufacture extended itself to the south or west?

I did not hear of south of Drogheda to any extent. I could not describe its western limits. It is carried on very considerably in Antrim. It is so considerable in Derry, (query Belfast) that I have understood that one individual of Glasgow had from 2 to 3000 people employed during the suspension of work that occurred in Glasgow.

Has it extended to Donegal?

I believe not. It is generally understood that the linen manufacture is spreading westward. The communication with England and the west of Ireland, is more difficult than it would be if the distance was the only thing to be considered. The prevalence of westerly winds makes it very difficult to double the north of Ireland, and the cotton manufacture has established itself most where the communication with this country is the easiest: the linen manufacture not depending so much on British communication, has rather travelled westward. There is a cotton manufacture at Bandon, County Cork; it is extremely prosperous, its effects have been most beneficial upon the manners and habits of the neighbouring people, and during all the disturbance in that county, that district has never been disturbed in such a way as to interfere with the operations of the manufacturers.

Are you aware of any natural or artificial obstacle to the extension of both the cotton and linen manufactures in the south of Ireland?

I think if the manufacturers are left, as I trust they will be, to pursue their own interests in their own way, the cotton manufacture will establish itself in the north-east parts of Ireland, before it establishes itself in the west or south. Not that I apprehend any fatal inaptitude in the south-west part of Ireland to become a manufacturing country, but because I think those things are decided in deciding the course that manufacturers will naturally take. I think, also, the facility of intercourse by steam vessels in the narrow seas, will have a material influence in favour of the north. I have no doubt that the demand now is such, and the cheapness of labour is such, that the applications for assistance from the British manufacturers will not be fully satisfied in the north-east, and I have no doubt that it will extend to the south; but they have much to create that they have not in the north-east, and they will have much more difficulty in creating it.

To what do you attribute the extreme caution which prevails, as to the manner in which the manufacturers of Great Britain employ their capital in Ireland?

If persons find that in Cork and Kerry the wages of labour are materially lower than in any other part of Ireland, those persons will soon take advantage of that circumstance, and will set about finding out the obstacles which prevail. If there is a prospect of being burned down, they will soon ascertain that, but they will also take pains to ascertain whether there is any such danger. Communication with England under the ten per cent duty, was never thought of; the idea of carrying cotton goods to Manchester to be sold, was a thing could not be mentioned in 1821 without being laughed at. The manufacturers of Belfast, who came to London to petition us not to destroy them, thought it a mockery, when they were told that they might find a market here; they could not believe it; but nevertheless they sold a part of their stock at Manchester, on their way home. The establishment of manufactures in the south of Ireland would have a tranquillizing effect; they would give persons a wish to protect that from which they derive their bread. If there was a sweeping hostility between the people and the troops, manufactures might be in the way of the fire, but I do not believe they would in themselves be the object of any hostile act.

If the disturbances were allayed would English capitalists be likely to establish manufactories in Ireland, on a much larger scale?

I have no doubt that manufacures will increase in Ireland rapidly, and that without its being certainly known whether the tendency to disturbance has entirely ceased or not.—If the disturbances are frequent, or demand less, the progress will be slower—if the tranquility is greater, and the demand increased, the progress will be more rapid; but I think, throughout all, the interests of the manufacturers will operate rapidly a most essential change. I do not doubt that a beginning has been made of a system, which will operate, until Ireland is brought to have a fair share of the English system of manufacture, and until the wages of labour become nearly on a level with the English wages, and until profits are nearly equal in the two countries; that may be a distant period, but I have no doubt there will be a rapid extension of manufactories in Ireland.

The testimony of J L. FOSTER, Esq. is to the same effect as to the extension of the cotton manufacture. It seems (says that gentleman) to be generally understood by every one, that the system called one of protection was one of prohibition, and that the cessation of that system has presented an opportunity for Irish industry in directions and to an extent that never was before dreamt of. The counties in which the manufacture now prevails are Down, Antrim, and Louth, and the county of Dublin, in some degree; but it is proceeding also to the north-west, and will no doubt to the westward and southward. There is good reason to believe that in a very few years the cotton manufacture will be in possession of the north-east and eastern parts of Ireland. The counties I have mentioned have been the chief seats of the linen manufacture; all the coarser fabrics of linen are at present, I conceive, in the course of disappearing before the superior profits of the cotton manufacture, and are proceeding to the west and south. The finer branches of the linen manufacture have hitherto held their ground, and I should be inclined to think they would continue to hold it, and would continue in the north-east counties in connexion with the cotton manufacture.

When I was in Munster, in October last, I found those places which had been the seat of the coarser linen manufacture were in fuller employment than they had been for some years past. The same observation applies to Connaught. The coarser linen manufactures appear to be migrating towards the south and west. I will mention some circumstances connected with the county which I have the honor to represent (Louth) that was, to a considerable extent, the seat of the coarser linen manufacture. About two years ago the weavers had scarcely any profitable employment. A weaver found great difficulty in obtaining regular employment at 5s. a week—At present every weaver in my neighbourhood is fully occupied in weaving cotton, not linen. The weavers earn from 7 to 9s. a week, with this further advantage that it admits of their wives and children working also, who can earn as much as themselves, whereas in the linen business the profit was pretty much confined to the master of the family. They are not obliged to seek out for their materials as in the linen manufacture, the weaver has only to tender himself for employment, and he is furnished with cotton twist. There is at present a very marked and singular competition among the employers. The first appearance of the change was about a year and a-half ago, in my noble relative Lord Oriel's town of Collon. A perfect stranger appeared there in the course of a summer's evening, he asked how many weavers were in that town and its vicinity? he was told about four or five hundred; he said he was sorry there were not as many thousands for he was ready to employ them all. The people did not know what to make of him; but the fact turned out to be, that he was connected with some of the Manchester houses, and he has supplied cotton twist to all the weavers in that vicinity ever since. About five miles from Collon is Dunleer; in the neighbourhood of that village there were four or five hundred weavers all nearly starving. Very lately two strangers arrived and have established rival offices, each bidding against the other for the employment of those persons. In county Down, such is the eagerness to obtain weavers that it is becoming the course of the trade for the employer to pay the weaver in advance from two or three employers, under the promise of serving each of them first.—I have understood that there is a person in county Tyrone, who is employed by some of the English houses, who has not less than two thousand weavers employed near Drogheda. A great deal of the twist so woven is sent from Manchester and goes back without being bleached or dressed.

ON SEED CORN.

(From the Irish Farmers' Journal.)

Sir—Having been lately through several market towns of the interior, where corn was the principal article offered for sale, it was really a most painful circumstance to see the produce of uncommonly good arable soils, of such an inferior character, as to prove a shame to the farmers who offered it for sale, as it could only be attributed to their ingorance or negligence, in not having selected or renewed the seed-corn, whereby they might have obtained a large crop of superior quality.—Of oats, which seemed to constitute the great bulk of corn produce, a bright, full, short grain, fit for seed, was, with very few exceptions, not to be had; but on the contrary, poor, long, parti-coloured grain, or a black and white mixture, was the prevailing kind, which convinced me, at first view, that in the system of husbandry which produced it, there must be some extraordinary defect. The stunted crops and poor grain, fully attest that a narrow principle, or an unwillingness to submit to a trifling expense attendant on procuring proper seed, actuates the farmers of Ireland to a degree truly astonishing, and the perseverance which they manifest in keeping their own produce for sowing and adhering to the practice of their forefathers, right or wrong, would lead us naturally to doubt whether they ever exercised their own judgment, or deliberated at all on the concerns most intimately affecting their interests In the choice of seed, the oat grain seems to have been the most neglected, as the market samples of wheat, &c. sufficiently prove ; and it is to be observed of the oats, that the poor long grain is not easily got out of the hull, and retains the chaff coat, and is only fit for horse feeding, whereas, the short full grain, which some call the sparrow-bill or potato oats, are easily separated from the straw and chaff, and clean for the market in a superior manner. But farmers say such corn is much subject to be shed by storms, and is wasteful in the harvest process, &c. however carefully handled—so indeed it is, more subject to be wasted, which is a clear proof of its superior quality, for it is well known to every practical farmer, that good corn is more easily thrashed than that of an inferior kind, therefore, the advantage is decidedly with corn of the species most easily got out of the straw, notwithstanding there may be a waste to some extent in the harvest management.

The predilection for old practices which farmers entertain, are not easily subdued, and throughout the interior there are many, or indeed to say the truth, the entire of the farming population are now the same as they were a century back. It is true, there are many of the gentry who have set the example of improved husbandry, as far as it concerns their own consumption or growth of corn, but small farmers are little the better of beholding a fine green crop, or a promising corn field, the consequence of improved seed, and a system of superior management in the lord of the manor's demesne, because they have not been instructed in the practice, as to the minute preparation for seed, ground, or the use of improved implements necessary for advancing their systems of husbandry, and turning their lands to the best account. Now suppose, Mr. Editor, the gentry of this country would adopt the measure of improving crops of corn for seed, and in the sowing season exchange corn seed with their tenantry suppose at a rate of one shilling in the barrel or what might be agreed upon, as the farmer's, corn, especially oats, would meet the purpose of feeding, &c. and if a system of this nature was set on foot, and acted upon, our markets would afford a remunerating price, and instead of the present inferior samples and bad prices, the husbandman would be better able to meet the rent, and society would benefit by that very simple mode, which would operate as an encouragement, without any sacrifice on the part of the landed proprietors, and bring the tenantry into the practice of improving one of the most useful branches of agriculture, namely, that of being particular in the choice of good seed, and bringing grain of a superior quality to market.

In the hope, Mr. Editor, of seeing something of this kind effected, I beg leave to subscribe myself, your obedient humble servant,

J. M.

ON LARCH TREES.

(From the Scotch Farmers' Magazine.)

SIR—If you think the following hints concerning the Larch deserving of public notice, I have no doubt but that they will receive a place in your useful Magazine.

Larch has not succeeded, in general, so well as was expected some years ago, from the promising appearances then made while young, in almost every situation where it was planted. Larches have been attacked by insects, which have been supposed to be the cause of their decay. Although these may, in some measure, have hastened their decay, yet I do not suppose they were the entire cause of it; because, all the trees destroyed, seem first of all, to have been in a sickly state from other causes, and of course unable to bear the attacks of the insects. Their punctures, no doubt, occasioned such a waste of the juices of the plant, as, when in an unhealthy state, must have hastened its decay. The greatest mischief was done in dry summers, when the plants were less vigorous than in wet or more favourable ones.

I have observed in Lord Seafort's plantations, where the soil is tolerably good, or of a kind favourable to the growth of other trees, such as beech, oak, chesnut, &c. that the larch has done well, and withstood the attacks of the insects, except where too thick or too much confused by other trees, and so become unhealthy; in which case, they have in general suffered, even although the soil was favourable.

In most instances, for the first four or five years after planting, larches have done well; and, after that term, they either decayed, or suffered much from insects.

It is well known, that soil that will afford nourishment to a young plant, and where it may even thrive well for a time, is not always sufficient to afford nourishment when it gets older. Thus the plant becomes sickly for want of proper food, and at last may fall a prey to insects. For instance, vegetable mould, and light soil, is most favourable and kindly for young plants to strike root in; but, after setting off in a vigorous and promising manner, they stop short after a certain time, according to the sort of plant, entirely for want of proper nourishment; this I suppose to be the case with the larch.

It is in general, between five and fifteen years of age, that larches have suffered most; and from the observations made, I suppose, although the insects had never attacked the tress, that they never would have succeeded or come to maturity, (although they might have struggled to live a few years longer, had they not been attacked,) because the soils in which they were planted, and other circumstances already mentioned, were unfavourable to the growth of larch trees. In wet soils, or those retentive of moisture, larches will not succeed for any length of time, nor will they succeed at all in a poor, thin, dry soil; but, though the soil is moderately moist, and even occasionally flooded with water, yet if the bottom is not retentive of moisture, they will generally do well. As a general rule, it may be stated, that where the oak and the beech does not thrive, the larch will not come to perfection. On bottoms not wet, and on the sides of hills and banks, larches generally do well; but towards the summit they never succeed. I am, Sir, your most obt. servant,

M. S.

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HEDGE AND DITCH.

The following observations are from the General Report of Scotland.—Hedge and ditch in proper soils, and with attentive management, become excellent and permanent fences, improving every year in their value. To errors in the execution, and negligence in its training and protection, the failure of this fence may often be ascribed. The whitethorn frequently appears on mountain faces, in the highest elevations, where any natural wood is found. Frequently in such a situation, a patch of natural whitethorn protects a seedling ash, or other nursling tree, showing that both thorns and trees would grow and thrive in such situations, if planted and secured from injury. Such instances in soils never cultivated by human industry, and even where exposed to sheep and other animals, naturally suggest practical reflections to the planter.—Yet when planted in soils not suitable, or ill prepared, thorns do not thrive; neither do they answer when planted on soils of very different quality, in the same line of fence.

The common mode of propagating white thorns, is by sowing the seeds in nursery-beds, transplanting them from the seed bed into training beds, and setting them into fence rows at three or four years old; yet, perhaps, this is not the best method. When the soil is good it answers very well; if not the plants which have been pushed into luxuriance in the nursery, finding little nourishment in their new situation, become dwarfish, and many of them languish and die. Where the soil in the fence is naturally poor, and no proper means have been used to enrich it, the planter is often disappointed. In such situations, the line of the fence having been previously cleared from weeds, and afterwards carefully manured, the thorns ought to be planted directly from the seed bed; or some other kinds of plants ought to be substituted, more fitted to the nature of the soil, such as beech in gravelly soils, or larch in those of a coarse nature.

Fence-ditches, especially when intended for thorn-hedges, ought to be made between the wet and the dry soils, for the purpose of draining, as well as for fencing. Judiciously placed on one side of the ditch, thorns are sure to prosper uncommonly well, because the soil is usually rich, and the ditch prevents it from being too wet. Thorns will not prosper on too dry soils, nor on those which are too wet. When it is necessary to conduct the line of a fence through soils of very different qualities, the planter should either select such plants as suit the respective soils, or try by drainage and manuring, to equalize the soils as much as possible all along the line. If these precautions are neglected, the hedge is sure to grow very unequally in different parts of the line, strong in some parts, and weak in others; in which case, the whole ultimately turns out of little or no use.

Before planting out the young thorns in the line of the fence, it is necessary to prune the tops and to dress off any broken parts of their roots; and for this purpose, a sharp instrument that cuts clean should always be employed. The ordinary practice of hedgers, to hash the tops and roots with a common spade is barbarous in the extreme, as the parts are necessarily bruised, and do not grow freely afterwards.

The ordinary practice of placing thorns on the sides of high mounds of earth, often becomes the cause of failure. The root weeds often grow so luxuriantly out of this bank, as to be incapable of extirpation, and choke the thorns in their growth. This bank of earth often becomes so poor and dry as to be utterly unfit for nourishing the young hedge plants; and after some years of feeble growth, they sicken and die out. The space of ground, also, occupied by this bank, and the ditch from which it is formed, is a considerable sacrifice of soil that might be productive under cultivation. The only remedy when a hedge begins to fail in this way, is to throw down the old earthen bank, so as to admit air and moisture, and to secure the young hedge by means of a rail fence. By this plan, previously cutting over the thorns, many a hedge that is now of little use might be recovered. Why then, we may ask, should such walls of earth be erected? and why are not the thorns planted on a bed more judiciously formed where they may be secured from the first by a rail? Perhaps the reason is, that in Scotland sufficient materials for rails are very hard to be procured, and there are no means so effectual for protecting the young hedge in the course of its growth, as the use of a fence ditch on one side, and a mound or clap-dike on the other. When the hedge is trained, the mound on one side may be thrown down, and the ditch on the other side filled up.

In arable soils, the following plan may deserve consideration. Having cleared the soil in the intended line from all weeds, and enriched it by manure, either by means of an effectual naked fallow, or a well dressed crop of potatoes or turnips, let it be gathered up by the plough into a narrow high crowned ridge, well harrowed; and again gathered and harrowed till the line is made quite fit for the reception of the thorns. A small open drain may be run along one side of the line, or both, if necessary; but a stout rail must be erected to protect the growing thorns. By this very simple mode, very little expense would be incurred, very little land wasted, the thorn plants would probably grow much faster, and far less expense afterwards incurred, in weeding and training up the fence.—This plan will only answer in very favourable soils, and where there are abundant materials for rails.

Constant and effectual protection from cattle of all kinds, and especially from sheep, is indispensably necessary in all cases, and must be persisted in till the fence is complete. In order to render it equally close all along the line of fence, a young hedge should be cut all over with a sharp hedge-knife, a few inches above the ground, in the second year of its growth, early in spring. It ought afterwards when it arrives at sufficient strength, to be pruned regularly in a sloping wedge-like form, the two sides meeting in a point, about 5 or 6 feet high, the bottom of the hedge being left 2½ or 3 feet wide. In this way, the hedge gets the appearance of a steep roof, or the hogged mane of a horse. Every twig receives its full share of rain, sun, and air, and the lower branches are not injured by water dropping from above.

A very curious article by Dr. M'Culloch, has appeared in the Journal of Science.—His attention had been turned to the means of multiplying fish, by a paper published by M. Nouel of Rouen. One very interesting topic of which this writer treats, is concerning the means of transferring the inhabitants of fresh waters in one country, to other waters where they are not found. The whole paper which appeared in *Tilloch's Journal* is highly worthy of attention; and Dr. M'Culloch intimates that the practical trials recommended by the author had not taken place, although it is on such experiments that the value of the improvement will ultimately depend. An example which came under the Dr's notice induced him to examine the subject more carefully, than has been done by former enquirers, and from his account we take a few extracts. The following are some of the facts which favour M. N's. plan of cultivating sea-fish in fresh water.

The Plaice, it appears, has been carried from the North sea to the ponds of E. Friesland, where it has become established. According to Pallas, the sturgeon, the sterlet, and some species of salmon reside in the river Rama without ever descending to the Caspian sea; and the authority of such a naturalist is perhaps sufficient to establish this interesting fact.

These are some of the strongest proofs which M. Nouel adduces in support of this project; the Dr. then proceeds to consider some facts and reasonings, by which its plausibility may be supported, and an inducement offered to those who have it in their power, to make such experiments as alone can establish it among those facts in natural history, which may be applied to the uses of man; to increasing the quantity, or adding to the accessible variety of his food.

1st. The habits of many sea-fish are in this respect, so convertible, that a large portion of their time is passed in fresh water. For instance the several varieties of the Salmon. The Salmon trout, or sea-trout, as it is called in Scotland, is now a permanent resident in a fresh-water lake in the island of Lismore, and without the power of leaving it or reaching the sea. There it has been known for a long course of years, perfectly reconciled to its prison, and propagating without any apparent difficulty. If this fish, whose annual necessity for returning to the sea is the same as the common salmon, has thus easily become naturalized, there is little reason to doubt that the same experiment would succeed with the salmon itself. The fishermen object to this opinion, that this fish becomes meagre and diseased by its residence in fresh waters, and is compelled to go to the sea to recover itself. But we need not feel much concern respecting their philosophy; while they forget at the same time that it is the operation of spawning by which the fish is injured, and that sea-fish suffer from the same cause. It remains to be proved that the salmon would not recover itself in fresh-waters, as the sea-trout does in Lismore; and this is the experiment which is to be tried before we are entitled to pronounce a negative. To render the Salmon a permanent resident of fresh-water lakes would unquestionably be a great gain; and that this has not been tried, often as it has been urged on those who have the means, is only an additional proof of the plodding incredulity and obstinacy of those who are averse to all innovation, because it is innovation, and who believe that they have themselves attained the summit of all possible knowledge.

With respect to the Smelt, the Dr. observes its delicacy would render it a very desirable acquisition in our ponds, while its size would probably cause it to find an easy supply of food, and its facility of living for a time in fresh water render its naturalization easy. I accordingly caused some trials to be made for this purpose; they did not however succeed, but the experimenter thought the fish had been injured in the transportation. Since this, a perfect experiment to this effect has been made by Colonel Meynell, in Yorkshire. The fish have lived three years and have propagated abundantly. They were not affected by freezing, as the whole pond, which contained about three acres, was so frozen over as to admit of skating. As to their quality, it was considered by the fishermen of the Tees, by whom the pond was drawn, that they had never seen "a finer lot of smelts."

In the Dee, and other rivers the common eel migrates annually to the sea, wherever it has the power of reaching it; returning again to the rivers and lakes which it has been supposed permanently to inhabit. The Conger eel which is an inhabitant of the sea, also frequents rivers. That the common cod (Gadus Morhua) can reside permanently in fresh water, is proved in Shetland. The inlet called Stromness-voe communicates with an inland fresh-water lake, by a channel so narrow as to admit of a rude bridge by which the opposite shores are connected. In this freshwater, cod are frequently taken, and that the water is perfectly fresh is certain, as the tide is never sufficient to pass the strait of communication, merely damming the fresh-water till the ebb again commences. The inhabitants seem to entertain no doubt that the cod continues there for a considerable time; but the subject not having particularly interested them, it remains to be discovered whether their residence is permanent or occasional, or whether they spawn there. If they reside there for any length of time, it is probable that this water contains other sea-fishes, by which they are tempted, unless they feed on trout. The whiting and rockling occur in abundance in those Highland sea-lochs where the water is at times perfectly fresh, from the magnitude of the rivers in rainy seasons; not quitting their haunts even when it is deeply tinged by the colour derived from peat. From their permanence in those situations, and from being taken of all sizes, they probably spawn there; and if so they offer like the common river flounder, and the pike, perfect examples of the permanent convertibility of the habits of these species. I have been also informed that a sole was kept in a fresh-water pond in a garden, by a person whose name I need not quote, for a great many years—Although the mackerel is rare in Scotland, it is sometimes taken in the lochs of the W. Highlands, where the water from the entrance of rivers, is nearly or absolutely fresh. This proves at least, that whatever aversion they may have to residing permanently in fresh-water, whether from the want of food, or any other reason, they experience no difficulty in respiring in it.

The Mullet which is a sea-fish, not only ascends rivers, but has been introduced and detained in ponds. This fish does not necessarily spawn in rivers. Yet, in Asia Minor, it appears that it ascends the different rivers for that purpose. *This valuable fact proves that in the matter of spawning, fishes are not tied down to those fixed and necessary habits which has been commonly supposed.*

As the case of the naturalization of the grey mullet is particularly interesting, and is at the same time unknown, except to the few individuals who caused the experiment to be made at random, it deserves a more particular description.

This experiment is as perfect as that of the plaice in East Friesland; and therefore holds out a temping prospect of success in other cases where no trials have yet been made.

About ten years ago a number of the grey mullet, about the size of the finger, were placed in a pond of three acres in area, in Guernsey; the water being perfectly fresh.—They have since increased in size as well as in numbers; although from the small extent of this pond, it is evident that their ultimate increase cannot be very considerable.—Fish of 4 pounds weight have since been taken from this pond, so that in this respect as well as in their propagation, the experiment is complete and perfectly satisfactory. It is remarked, that they are much fatter than those taken in sea-water in their natural state, but that the flavour is not so good.

This experiment is fully confirmed by the practice of the Sicilians. In the Lake Biviere this fish is cultivated for the purpose of food, and because its quality is thus found to be improved. Lobsters and Crabs are introduced into the same lake, where they are not only preserved but improve in flavour. A confirmation of this fact, is that Oysters acquire their good qualities only by residence in fresh-water. Thus the oysters of Portsmouth, and elsewhere are conveyed to Colchester; and if those which are called "Natives" possess good qualities, it is because they are produced at the estuaries of rivers, where the water is considerably fresh.—It is known to every one, that the best shrimps are those which are taken in the fresh and muddy shores of England.

The herring is found in the fresh American rivers, it has also been met with in Loch Dhu, a fresh-water lake in Argyleshire, in this case it appears to have been introduced during a flood, and to have been confined by the sinking of the water, so as to have remained imprisoned for many years. Whether or not it propagated in the lake has not been ascertained. This however is a trial so easily repeated, that nothing probably has prevented it, but that ignorance or prejudice which it is the main object of this paper to remove, by holding out reasons for probable success.

The white whale is known to ascend to the rivers in North America. It is known to ascend the Hudson for one hundred miles above the salt water, and is taken by an established fishery high up in some of the rivers of Hudson's Bay.

It must be evident that no permanent naturalization of the kind under consideration can be expected, unless the new situation is such as to provide the fish so introduced with a sufficiency of food. In many cases perhaps we may judge for them and if the proprietor of a lake chooses to eat cod rather than pike, at the expense of a proportion of his perch and trout, and can persuade them to live in his fresh water, it is probable they will not have to lament the want of food.

In any case, our ignorance on this subject need not be a bar in the way of any experiment respecting it. So many species find their food without our knowing the means or the materials, that we may safely trust to their wants and their powers. Besides as the enormous reproduction of all these tribes is evidently in part destined for the general support in succession of all those of which they are the prey, it is evident that by increasing the population, and the variety in any of these watery kingdoms, we increase the means of mutual support. The smaller feed on that which the larger could not find or use; and thus they maintain the existence of their superiors, who in return are destined perhaps to maintain them with their own eggs or offspring. If again the plaice and the flounder natives of the sea, have found the means of permanently feeding themselves in fresh waters, it is not unlikely that many others may there find food unknown to us, and at present unknown even to them.

But there is no difficulty in feeding them, should that prove necessary. This was a common practice with the Romans. Varro and Columella mention the immense sums which the Romans expended on feeding the fish in their vivaria; and the enormous prices paid by Cæsar, Lucullus, and others, may shew us to what an extent the practice of keeping fishponds was carried, and how important a branch of rural economy this was considered. The consequence attached to fishes by this people, is apparent every where; and no one need be told of the famous senatus consultum held on a turbot, or of the fishes which Martial tells us, came to their owner's call and licked his hands.—If in our own rural economy, it is found profitable to feed pigs and fowls, it would not be less so to feed fish, nor are these tribes apparently less omnivorous than hogs.

Of the speculations now detailed, nature has executed two, perhaps more; art, in the plaice, the mullet, and the smelt, has carried three more into effect. There appears no practical difficulty attending it, as fish can be transported alive in water, for a great length of time and to great distances, without inconvenience. Should this paper meet the eyes of a body of proprietors distinguished for their intelligence and activity, it may perhaps lead to the adoption of a measure for trying so simple an experiment.*

Disappointments arising from the transportation of fish are generally to be ascribed to those who have made the attempt, not to the difficulty of the thing itself. The fault has been in taking fishes which had been long hooked, dragging upon long lines, or entangled for a night or more in a trammel net. It is well known that when cod are taken by hand lines, and thence transferred to the wells of the fishing boats, they always live, unless the gills or stomach have been much injured by the hook.

As far as this is a question of economy, it is not necessary to say much. It may, perhaps, abstractedly be deemed of little consequence, whether a German is condemned to eat roach or gudgeon, or to regale on whiting and smelts; or whether in a Highland lake, john-dory is to be substituted for pike, and turbot for par. But all the improvements in the details of human life may, if we please, be measured by the same rule. We have naturalized and domesticated the wild animals that walk or fly, to be our fellow-labourers, our companions, our servants in the chase, our amusement, and our food. Nature has given us crab and sloes, which we have converted by our industry into golden pippins and green gages. It is not an illaudable pursuit to apply to the uses of man all those bounties which nature has spread around him; but on the possession and enjoyment of which, this law has been stamped, that without labour and industry they shall not be attained.

Yet, while on this question of economy, we may suggest a few doubts of the prudence of that conduct which in this country neglects the sources of rural profit to be derived from cultivating the produce of its fresh waters.—In France, it is said that the value of an acre of water is equal to that of an acre of land; and these ponds are rented by great fishermen or fishmongers, who adapt these systems of fishing their farms in such a manner as to secure the greatest possible permanent stock of fish; removing the superfluous produce without injuring the future population, and thus procuring a regular supply, without the risk of exhaustion.

The quantity of fresh waters in Britain is so considerable as to exceed those of any country in Europe, Switzerland excepted.—From these no profit whatever is derived.—The canals might be stored with fish. Even the rivers are unproductive, with the exception of salmon and of eels.

Should such a project ever be carried into effect as the naturalization of sea fish in fresh waters, the good consequences are obvious.—The facility of commanding a supply of fish would be increased; while that also would become certain in place of depending on the weather. The regularity of fishing, it is well known, increases the supply, or at least does not diminish the production. The cause of this fact has not been clearly ascertained.—By removing the superfluous numbers, it is likely the fish will not devour each other to the same extent, or that fewer may perish from want of food. Thus the removal in a regular manner of the overstock may not check its increase.

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* The Dr. particularly recommends the experiment to be made with the cod in Stromness-voe, first shutting up the narrow opening which admits the fresh water by a grating.

The Dr. farther remarks that there is no good reason why the turtle should not be naturalized. What an acquisition this would be, it may be left to the court of aldermen to decide.

The animals of hot climates, that live in air, have been so; and why the submarine, or amphibious ones should not equally admit of this change of habits, I know not and nobody else does. The turtle might take its place along side of the peacock and the pintado, and his fellow turtles of the land; while if he chose to hybernate, he might find a dormitory in Loch Lomond or elsewhere, to pass the chilling hours of winter. And the change would be less than in the case of land animals.

There is another practice much less known that it merits, little known out of Scotland where it has existed for many years. This is the preservation of sea-fish in salt-water ponds. There are three of these in Scotland. In these even cod are known to live for many months, and to increase in size, without any loss of quality, and without any other food but what is imperceptible to us which is brought by the daily influx of the sea. In the pond in Galloway, some individual cod have been living for many years, so as to have become tame, feeding like hogs out of a trough.*

The merely temporary naturalization to our lakes and ponds in the case of sea-fish would be no light acquisition to the gastronomer who might desire to have turbot before the season, or to reserve it at five shillings for consumption, when the price has risen to three guineas. If the cod chooses to live in the fresh lake of Stromness-voe, there is no reason why we should not keep them in our own gardens till the day of giving a dinner comes round, or why Mr. Groves should not render the serpentine a park for surmullets, instead of allowing it to be consigned to frogs and tadpoles. It is to be hoped that the Fishmonger's Company will take these matters to heart as in duty bound; and that in the progress of perfectibility even the odious canal in St. James's park may become a repository for turtles, instead of what it now is, a Stygian nursery of Malaria and his black host.

Remarks on Mr. Robertson's Experiment, by Sir John Sinclair.

(See last Number.)

It is impossible to peruse the above communication without admiring the zeal and public spirit and the anxiety to discover the truth, which it displays.

It evidently appears that a very great increase in a crop of oats, and a still greater one in flax, have been obtained by the use of salt; and that there is encouragement enough to repeat these experiments with the greatest probability of success. The plan of trying salt with summer fallows, sowing it at three different times, likewise promises to answer, either with wheat or barley, for in some parts of the kingdom they prefer barley to wheat after a fallow.

If the plan of raising a crop of turnips without dung, as suggested by Mr. Robertson, by the means of sowing salt three times were to answer, the advantage would be inestimable. The expense would be considerably less—the quality of the root probably better—and the dung now required for the turnip crop might be employed in giving fertility to poor soils.

The experiments with stock, so far as they go, are likewise valuable; in particular, the plan of salting straw, of different sorts, in spring; and of salting potatoes, so as to destroy worms in horses, &c. and to prevent or to cure other disorders to which stock are liable.

On the whole, it is impossible to peruse the report without hoping that Mr. Robertson may receive the encouragement he desires (that of having salt duty free,) to ascertain a number of important particulars connected with this inquiry.

JOHN SINCLAIR.

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* Columella is here referred to who relates that the Romans transported the *spawn* of various sea-fishes to the different fresh-water lakes, as a regular trade.

Appendix by Mr. Andrew Robertson.

I am inclined to think, that salt will an- ver as a fermenter of earth and weeds, mixed gether, so as to destroy the vegetative power the weeds. The quantity I have tried is vo yards square of earth and weeds, with iree bushels of salt, which makes four solid irds, being three feet deep. It has ferment- l, but has not come up to blood-heat, the mpound being very earthy: whether a sser or greater quantity of salt would have ought the heat higher, I am not as yet able determine; but, at all events, the vegeta- ve power of the weeds will be destroyed bet- r than if the compound be made up with iked lime in place of salt.

The same quantity of moss and salt, made in the same way, has never yet come up a heat. I imagine that the moss was wet hen made up, and the salt melting made it lly more so. But I am determined to try still farther, as it will be a most essential ject to have this point decided.

eport of Experiments with Salt as a Ma- nure; by Mr. Peter Christian. Addressed to the Secretary of the Society.

Sir—Having observed in the list of pre- iums to be given by the Highland Society Scotland in the present year, one offered the person "who shall make and report to e Society the best and most satisfactory periments on the effects of salt as a manure general," I beg leave to acquaint you, for e information of the Society, that I pro- ired from Liverpool a quantity of refuse- lt mixed with ashes, in the proportion of iree parts of the former to one of the latter, ith which the following experiments have een made by me on this farm.

n a field of Potatoes, planted in drills, after Oats, following one year's grass, which had been laid down with Barley after Turnips fully dunged and limed; the soil a deep sandy loam.

The land having received the necessary oughings and harrowings, and being clear- l of weeds, 60 falls were divided into four qual plots for the sake of varying the applica- on of the salt.

Plot 1st having been drilled, salt was carefully scattered between the drills, at the rate of 32 bushels of the mixture to an acre; the potato sets were then planted in the intervals, and covered by splitting the drills.

On plot 2d, salt, at the rate of 16 bushels of the mixture per acre, was sown on the surface; after which the land was drilled and dunged in the intervals, at the rate of 14 tons of the best farm-yard dung per acre; and the potato-sets being then planted on the dung were covered as above.

Plot 3d, having been drilled and manured with farm-yard dung, laid in the intervals at the same rate, salt in the proportion of 16 bushels of the mixture to an acre, was carefully sown on the dung, and the potato sets were deposited and covered.

Plot 4th having been drilled and dunged in the same manner and proportion, and the potato-sets planted and covered in the usual way, salt was sown on the surface of the covered drills, at the rate of 16 bushels of the mixture to an acre.

These operations were executed on the 2d of May, and the rest of the field was planted the same day; farm-yard dung having been applied in the drills in the proportion already mentioned.

In plot 4th, the plants appeared above ground about a week earlier than those of the same kind of potato for which dung only was used, and the stems maintained a visible superiority of luxuriance during the season until they begun to fade, in which they had a priority even greater than in springing. In plot 3d, the stems were later in appearing than those of the same potato to which dung alone was applied. In plot 2d, the plants were still longer appearing than in the 3d; while in plot 1st, they were so backward that it was for some time apprehended the crop would entirely fail. At length, however, all the sets appeared to have sprung in all the divisions. In plot 1st, the stems were all along much stunted. Neither in the 2d nor 3d plots did they ever assume so much luxuriance as in the adjoining parts of the field where salt was not applied, and in all these three they were completely withered before the others had begun to decay. The four plots were drill-harrowed, hand-hoed, and earthed up along with the rest of the field. Plot 4th afterwards continued tolerably free from surface weeds. Plots 2d and 3d were but in a slight degree infested with them. But the drills in plot 1st were before harvest excessively over-run with grass and chickweed.

On the 27th of October, the produce of 12 square yards of each plot was ascertained by weight, and compared with the crop produced in the same extent of the adjoining part of the field. The result was as follows:

I.—Small American Potato.

	Amsterdam lb.
Plot 1st salted in the drills,	14½
Plot 2d salted on the surface, and then drilled and dunged in the drills,	20½
Where dung only was used,	41

II.—Purple Cluster.

Plot 3d dunged and salted in the drills,	35
Plot 4th dunged in the drills, and salted on the surface when finished,	36
Where dung only was used,	42

III.—Long white Kidney.

Plot 1st salted in the drills,	11½
Plot 2d salted on the surface, and then drilled and dunged in the drills,	30

Owing to an accident, the comparative weight of the last mentioned variety where dung only was used, cannot be exactly reported; but from the appearance of the crop, it may warrantably be stated that it was not inferior in weight to the other varieties for which dung alone was applied; and, therefore, the superiority of the dunged land over the salted may be considered as great in this case as the others.

With regard to the quality of the crop, it was observed, that while in the other parts of the field the potatoes were full sized and mealy, those for which salt was used were of unequal growth, many of them only of the size of marbles, and all of them waxy and comparatively unfit for the table.

On a field of Oats sown on a winter furrow after one year's grass, laid down with Barley, partly after Turnips and partly after naked fallow.

Three different parts of this field were subjected to an experiment on the 3d of May, just when the crop was fully brairded.

1st, On a strong clay, ¼th of an acre was salted, by sowing from the hand at the rate of 20 bushels of the mixture to an acre; ¼th of an acre, at the rate of 15 bushels, and ¼th of an acre, at the rate of 10 bushels; a ridge having, for the facility of comparison, been left unsalted between each of these divisions. This part of the field had been fallowed and fully dunged and limed in 1818.

2d, On a rich sandy loam, two ridges, to the extent of one-eighth of an acre, were salted in the same manner, at the rate of 18 bushels of the mixture to an acre. From a particular circumstance, these two ridges, though fully dunged for the turnips in 1818, got no lime, and it is believed had not been limed for many years before.

3d, On the same soil, where both lime and dung were abundantly applied in 1818, one-eighth of an acre was salted, at the rate of 14 bushels of the mixture per acre.

The different salted plots were duly inspected from time to time, for the purpose of remarking any effect that might have been produced by the application, but none was perceived, except that, in the mornings after heavy dews, and at other times after showers, the ground on which the salt was sown seemed to have attracted moisture more, and to retain it longer, than the adjoining ground.—Persons conversant in agricultural matters were occasionally asked (some of them being informed of the purpose and others not,) to compare the crop on the parts salted with what grew beside it; but neither from their opinion, from my own frequent inspections, nor by the observation of the person who manages my farm, and who entered zealously into the matter of the experiment, was I able to ascertain that the crop of oats was in any degree affected by the salt either in luxuriance or the time of ripening. The crop of the salted land was harvested at the same time with what grew beside it, and it was ascertained on thrashing equal parts of both, that the grain of each was exactly of the same weight per boll, while in point of quantity the difference, though not material, was in favour of the land which was not salted.

The field had on a former occasion been much infested with grub, but last season none of it appeared, and there was, therefore, no opportunity of ascertaining the effects of the salt in preventing its ravages on the oat crop.

(To be Continued.)

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N. W. SOCIETY'S MAGAZINE.

VOL. III.—NO. 25. WEDNESDAY, MAY 11, 1825. Price 2d.

At a Meeting of the General Committee of the North West of Ireland Society, held at the King's Arms, Derry, on the 4th May, 1825,

Present—The Lord Bishop of Derry in the Chair.

Sir J. Bruce, Bart.
Sir S. Hayes, Bart.
A. Ferguson, Esq.
Rev. Edward Bowen.
Rev. William Knox.
Hugh Lyle, Esq.
S. Bruce, Esq.
Rev. T. Richardson.
C. Warner, Esq.
James Smyth, Esq.
H. Bruce, Esq.
J. Fenton, Esq.
W. Miller, Esq.
C. M'Clelland, Esq.
J. A. Smyth, Esq.
Rev. P. Maxwell.

A letter dated the 30th April, 1825, from John Boyd, Esq. respecting the Charter, having been read,

Resolved—That Mr. Boyd be requested to have a rough draft of a Charter (after the plan of that of the Highland Society) prepared, and forwarded to our Secretary, for the purpose of being submitted to a General Meeting of the Society, with as little delay as possible.

That the Secretary, on the receipt of said draft, do call a General Meeting for the purpose of considering the same.

* * *

4th May, 1825.—At a General Meeting of the Subscribers to the Agricultural Seminary, called by Notice,

Present—The Lord Bishop of Derry in the Chair.

Sir James Bruce, Bt.
Sir Samuel Hayes, Bt.
A. Ferguson, Esq.
Rev. Edward Bowen.
J. A. Smyth, Esq.
H. Lyle Esq. Ashbrook
J. Fenton, Esq.
Rev. Thomas Richardson.
Charles Warner, Esq.
William Miller, Esq.
Cary M'Clelland, Esq.
Stewart Bruce, Esq.

The Secretary having read the following resolution, passed on the 15th October, 1824, viz.—" We, the undersigned, subscribe one, two, or more shares, of £25 each, for the purpose of establishing a seminary at Grocers' Hall, for general education, somewhat on the plan of the institution of M. Fellenberg, at Hofwyl, comprising instruction in the theory and practice of Agriculture, with Classics, Mathematics, Drawing, Surveying, Engineering, and other acquirements"—

Resolved—That the sum of £5 per share be paid to the Treasurer for the purpose of carrying theressolution into effect.

Resolved—That J. A. Smith, Esq. be requested to act as Treasurer and to receive the deposites.

That an advertisement be forthwith inserted in the following Newspapers, viz.—Two London papers, (Times and Courier,) two Dublin papers, one Edinburgh, one Glasgow, the Belfast Commercial Chronicle, the Irish Farmer's Journal, and Evans and Ruffy's English Farmer's Journal, once a week for four weeks, requiring proposals from such persons as are qualified to act as Classical and Principal Master, as Mathematical Master, as an Assistant to the Mathematician, to teach Writing and English. A Professor of Botany and Chemistry, a Drawing Master, a Professor of Mineralogy, &c. and a Principal or head Farmer.

All applications to be made to William Marshall, Esq. Secretary to the North West Society, Londonderry, if by letter, post paid.

Resolved—That the Lord Bishop of Derry, James Sinclair, Sir Robert Ferguson, Bart. Hugh Lyle, Ash-brook, Charles Warner, John Fenton, William Miller, and William Marshall, Esqrs. be a committtee for receiving proposals, preparing a prospectus, and arranging all other business prior to the Meeting in September next, and that all other subscribers have the liberty of attending and voting at the Meetings of the committee, which is to assemble on the second and fourth Wednesdays in each month.

Resolved—That a General Meeting of the Subscribers be held on Thursday, the 22d Sept. next.

A meeting of the landed proprietors, merchants, and farmers of the town and neighbourhood of Nn-Limavady, was held on the 26th ult. for the purpose of taking into consideration a communication from the Hibernian Mining Company—Marcus M'Causland, Esq. in the chair, when it was resolved, that being duly sensible of the many advantages to be derived by all ranks of people from the exertions of the Hibernian Mining Company, particularly for the discovery of coal, they would give every facility in their power towards promoting their laudable intentions, and would recommend the same to the serious attention of the great absentee proprietors of that district. A Committee was then formed, to correspond with the Secretary of the Hibernian Mining Company, and to adopt such measures as should in the sequel appear necessary.

* * *

The Rev. Mr. Hickey's letter has been received—th name of that gentleman was by mistake omitted in the l of Honorary Members of the N. W. Society—which om sion we hope that gentleman will pardon.

The authors of the General Report of Scotland, after a discussion on the advantages and disadvantages of fallow, conclude the subject with the following useful observations:—Agriculture is assuredly an experimental art, yet as each individual experiment requires at least a whole year for its performance, the general results of any rotation system, require a number of years before they can be compared, and pronounced on with certainty.—There is, perhaps, no other art to which an ancient aphorism, *art is long and life short*, can be applied with equal truth. In the great and leading practices of farming, the multitude follow general principles of practice which they have noticed from their infancy, almost without question or consideration as to their expediency, and scarcely ever think of endeavouring to make the smallest alteration or improvement. A few bold and judicious men, who occasionally travel into distant districts, fortunately observe new practices with a discerning eye, and introduce them into their own farms, whence they are gradually adopted by their neighbours. Occasionally an adventurous philosoper dares to think for himself, and strikes out new and unheard of practices, some of which fall into oblivion, and others take firm root, and are gradually disseminated. But generally speaking, the principal improvements can only be traced as having travelled from one spot to another.—Among original inventions in farming which can actually be traced, are—1st, the drill system of Jethro Tull, firmly established in the turnip husbandry of Scotland, by Mr. Dawson; 2d, the various improvements of Mr. Bakewell, in the breeding of stock, and of sheep in particular; and 3d, the threshing machine of Mr. Meikle. Of travelled improvements may be noticed the winnowing machine brought into Scotland from Holland, by the father of Mr. Meikle, and said to have originated in China. The plough drawn by two horses and guided by one person, recommended by an English gentleman fifty or sixty years ago, to some proprietors near Edinburgh, and now universal in Scotland. And lastly, in the opinion of the friends of fallowing, the introduction of that practice into East Lothian, about one hundred years ago, on the suggestion of an English traveller to Mr. J. Walker, innkeeper, at Beanston.

It may be possibly considered as presumptuous to pronounce decisively on the merits or demerits of the fallow system, without a consecutive series of comparative experiments. But in the opinion of the most enlightened agriculturists in all the well managed districts of Scotland, and confirmed by their experience, " A complete over-year's naked fallow forms *on all clay soils*, the indispensable basis of all good husbandry." In default of direct positive proof, the indirect negative may be considered in a great measure conclusive of the question. In the last years of a lease, a *way-going* tenant is naturally anxious to take all he can from the land, at the least possible expense. He often neglects altogether, or slurs over the fallow process, and takes as many successive crops as can be got, with as few ploughings as is practicable. On these occasions it uniformly happens that the first crops of the succeeding tenant have to toil for a scanty subsistence amidst legions of weeds, and are proportionally worthless; and that his first series of fallows have to be carried on at an unusual cost of time and labour, and consequent expense. On such occasions may be seen potatoes and turnips growing on land full of the roots of couch, and corn crops so overrun with weeds, that their stubbles have the appearance of grass fields. Wheat lands, therefore, require to be thoroughly fallowed, and turnip lands, to be carefully worked and cleaned for a drilled crop once in every rotation.

The fallow process, as conducted by the most judicious cultivators in Scotland, may be thus described. Invariably after harvest, the land intended for being summer fallowed in the ensuing year, gets an end-long ploughing, which ought to be as deep as the soil will admit, even though a little of the till or subsoil is brought up. This both tends to deepen the cultivated or manured soil, as the new earth incorporates with the former manured soil, and greatly facilitates the separation of the roots of weeds during the ensuing fallow process. This autumnal ploughing, usually called the winter furrow, promotes the rotting of stubble and weeds; and if not accomplished towards the end of harvest, must be given in the winter months, or as early in the spring as possible. In giving the first ploughing the old ridges should be gaered up, if practicable, as in that state they e kept dry during the winter months, but is not uncommon to split them out or vide them, especially if the land had been eviously highly gathered. Thus each ridge divided into two half ridges. Sometimes e furrows of the old ridges are made the owns of the new ones, or sometimes two lges are ploughed together by what is cal- l casting. After the field is ploughed all e inter-furrows are carefully opened up first the plough and then by the spade, that all oisture may flow off. And every precau- n is used that no water may stagnate in y part of the field. Upon the accuracy of ese operations the efficacy of the succeeding low very materially depends.

In this state the land remains all winter, by ich the soil becomes tender and easily ought. When spring-seed time is over, e fallow land is again ploughed end-long. formerly split it is now ridged up; if for- erly gathered, it is now split or cloven wn. It is then cross-ploughed; and after ng till sufficiently dry to admit the har- ws; it is harrowed and rolled repeatedly, d every particle of the vivacious roots of eds carefully gathered into heaps and burnt carted off to the compost midden. The low is then ridged up, which places it in a e condition in case of bad weather, and poses a new surface to the harrows and rol- ; after the weeds are gathered by hand, t a previous harrowing is necessary. It is erwards ploughed, harrowed, rolled, and thered, as often as may be necessary to re- ce it into fine tilth, and extirpate all root eds. In this way repeated crops of seed- g weeds are brought into vegetation and stroyed. The larvæ likewise of various ects, and an immense variety of the seeds weeds are devoured by the birds, which then the farmer's best friends, though en proscribed as his bitterest enemies.

When effectually reduced to fine tilth, and oroughly cleaned, the fallow is again plough- end-long into gathered ridges or lands fif- n or eighteen feet broad. If the seed is to drilled, the ridges are made of such a dth as may suit the particular drill-machine be employed. Any particular breadth is off by means of poles. After the land has en once gathered by a deep furrow, proportioned to the depth of the cultivated soil, the manure is laid on, and evenly spread over the surface. A second gathering is now given by the plough; and this being generally the furrow upon which the seed is sown, great care is used to plough as equal as possible.—After the seed is sown and harrowed, the furrows of head-lands, and *gaw* furrows are opened up and cleared.

The operations now described and recommended as essential to good husbandry, on stiff clays and wet soils, with a retentive bottom, are numerous and expensive—in few cases less than sometimes 7 or 8 ploughings are necessary, with 6 or more complete harrowings. These will cost three or four pounds per acre, besides one year's rent and taxes extraordinary, merely as a preparation for a crop of wheat. But when the superiority of that crop is considered, as thus produced, and more especially when the improvement of the subsequent lea is taken into account, whether for hay, soiling, or pasture, and the richness of the land when again broken up, and during the remainder of the rotation till fallow becomes again necessary, there can be no doubt, of the propriety and economy of giving *strong land* a complete fallow once in every rotation or course of cropping.

If a fallow is judiciously and industriously conducted in the manner described, it may certainly carry repeated alternate crops of grain and pulse, without any intervening naked fallow, for a considerable period, perhaps for six or eight years; and when such land is to be fallowed a second time, it will require fewer ploughings and harrowings than stated as necessary for foul land. Such extended aration as is here supposed, will generally require more manure than can be supplied from the direct funds of a farm. It is only advisable, therefore, near towns, where manure may be purchased or where there is a full command of sea-weed. To preserve the beneficial effects of fallow on ordinary farm land, which has no opportunity of receiving manure beyond its own resources, it is certainly the most economical plan to lay it down to grass with the crop immediately succeeding the fallow, and to take such successive crops of grain and pulse as its condition will allow, when broken up from lea, previous to the next fallow.

On a field of Barley sown out with Clover and Rye-grass seeds; the soil a good sandy loam.

(Continued from page 192.)

Of a part of this field which was last year completely dunged for turnips, but had not been limed for a great many years, 60 falls were measured off immediately after the barley, clover, and rye-grass seeds were sown, and the land harrowed and rolled. Of these, 30 falls were then salted from the hand, in the proportion of 18 bushels of the mixture per acre, and 30 falls, at the rate of 12 bushels.

In another part of the field which was fully limed in 1816, and dunged for turnips last year, 40 falls were also, immediately after the barley and seeds were harrowed in and the land rolled, salted on the surface, at the rate of 16 bushels of the mixture to the acre.

Adjoining the last plot, the land had grown carrots last year without being dunged, and of it, after the barley was harrowed in, 20 falls were salted at the rate of 20 bushels of the mixture to an acre; three days after which clover seeds without rye-grass were sown upon the salt, and the land harrowed. The remainder of the carrot-land, was, for the sake of comparison, sown with barley and clover-seeds without either salt or dung.

The different salted plots in this field were carefully inspected from time to time, in the same manner as those in the field of oats; but no effects were detected on the crop of barley beyond what were noticed in the other. Between the salted and the unsalted parts there was no perceptible difference, either in the springing of the barley, in the subsequent growth of the plants, or in the luxuriance or ripening of the crop, and none appeared in the bulk when cut down. The season having been uncommonly dry, the clover and rye-grass seeds were backward in springing over the whole field. Since harvest they have, however, made good progress, and the plants of both are now abundant, where salt was not applied; but where it was used, there is an evident and material falling off; and to judge from present appearances, the grass-crop on the salted land will not exceed two-thirds of the weight of what is promised on the parts not salted. Even on the carrot-land, which, for experiment's sake, was deprived of the dung it should this season have received for the barley crop, the clover is the most abundant where the salt was not applied.

ON GRASS-LAND.

1st, On the 14th of May, 20 falls of a piece of unimproved sward in a grass field were measured off and sown with two bushels of the mixture.

Cattle had not then been admitted into the field, and they were kept off this plot till towards the end of June. A few days after the application, the salted sward assumed a brown appearance, which, on close inspection, was ascertained to proceed from withered plants of grass corroded by the salt. This wore gradually off, and in the course of two or three weeks the salted plot recovered its hue, but it could never be discovered that it derived any benefit from the application.

2d, On the 25th of June, part of an improved haugh, limed in 1816, which has been four years in grass, and in which cattle had been pastured to that date, was railed off, and half an acre of it sown with eight bushels of the mixture.

Here the effect of the salt was the same as on the unimproved sward. The grass was withered, and did not recover its verdure for several weeks, nor did it afterwards appear to derive any advantage from the application of the salt; on the contrary, the part salted did not, during the season, overtake in luxuriance those parts within the railing, on which no salt was bestowed.

3d, The same day, in a field of first year's grass, one acre of what had been depastured by cattle during the previous part of the season, was sown with 16 bushels of the mixture; and one-fourth of an acre of what had been cut for soiling was sown with four bushels.

Both plots were saved for subsequent soiling, but on them the smallest visible effect was never produced by the salt. Either from the sward being here more open, or the plants more vigorous than in the older grass fields, no corrosion and withering was perceived, and between the salted and unsalted parts no difference of subsequent growth or luxuriance could be discovered.

ON A FIELD OF DRILLED TURNIPS.

For this experiment a quantity of good black mould, dug from a bank of travelled earth, and exposed to the winter frosts, was on the 7th of May, made into a compost with salt, in the proportion of one bushel of the latter to one cubic yard of the former, and being placed under cover they were intimately incorporated by frequent turnings.

On the 21st of June, 70 falls of ground having been manured in the drills with excellent farm-yard dung, at the rate of 14 tons per acre, were sown by the turnip-machine with Norfolk globe, and then sown on the surface with the mixture of salt and ashes, in the proportion of 16 bushels to an acre.—20 falls, dunged in the same manner, were salted upon the dung in the drills at the same rate, the manure covered by splitting the drills, and the turnips then sown —20 falls were salted in the drills at the same rate, without any dung, the salt covered and the turnips sown. 20 falls were manured in the drills with the above compost, at the rate of 16 bushels of salt and 16 cubic yards of earth to the acre, the manure covered, and the turnips sown.—20 falls were manured, with the proportion of the compost spread on the surface, which being ploughed in, the land was drilled, and the turnips sown.—10 falls were salted on the surface, at the rate of 16 bushels of salt and ashes per acre, after which the land was drilled, and the turnips sown; and, lastly, a portion of land was drilled and sown without either salt or dung. The rest of the field was manured with farm-yard dung, in the proportion already mentioned, of 14 tons per acre.

The turnips in the 70 falls salted on the surface, after being dunged and sown, were in springing much on a par with those in the unsalted land adjoining; they are equally luxuriant in tops, but inferior in the size of roots; and on weighing three falls of each on the 3d instant, the difference was found to be exactly as 5 to 4 in favour of the crop on the unsalted land.

The division salted in the drills without dung may be stated as having totally failed of a crop. The few plants which have risen in it were late of appearing: the tops are stunted, and the roots of very diminutive size.

In the other four salted plots, the crop is also irregular and deficient, being inferior to that in the portion sown without any manure, and not half the weight of what was raised with dung alone. Of these four plots the crop is the best on that which was salted upon the dung in the drills, and on that which was salted on the surface before drilling; and it is the worst in the two for which the compost of earth and salt was used.

Such were the experiments made by me, which I beg you will communicate to the Society.

I have the honour to be, Sir, your very obedient humble servant.

Pet. Christian.

" Having, by actual inspection and otherwise, ascertained the accuracy of the facts stated in the foregoing Report, we do hereby certify the same.

" Robert W. Duff.
" William Stewart, *J. P.*

" 7th November, 1821."

GENERAL REPORT *of* SCOTLAND.

Chap. VIII. Is on the management of grass lands in Scotland, by Sir J. Naismith, Esq. and others. It comprises four general heads. First, natural meadows. Second, pastures occasionally cultivated. Third, old pastures in lowland districts; and Fourth, natural upland pastures.

In the more improved districts, dung is never applied by judicious farmers, to meadow land, till after it has been broken up by the plough, and completely fallowed. In pastoral districts this rule is not always observed. In several districts where there is little arable land, there is nevertheless much dung made from herds' cows, sheep occasionally folded, &c. In such situations, where so much dependence is placed on a piece of hay ground, dung may be advantageously applied as a top-dressing along with a little earth, if it can be obtained, provided the meadow is first laid dry. In some moorish districts, much of the dung is allowed to be floated by a stream towards the meadow, in order to get rid of it with as little labour as possible. Such instances of carelessness, however, are very rare.

Composts of every description particularly of earth and lime, have been found useful to bog-meadow. If the soil is chiefly composed of moss, then earth or clay, with lime are found to be the best manures. Even sand alone will improve the herbage. Judicious farmers have the compost ready to be laid on as soon as the hay is removed and then spread it carefully. A harrowing in the spring more completely exposes the soil to the action of the atmosphere, and allows the grass to rise more freely.

Under the head hay-making the following instructions are given. We transcribe the directions for the best mode of saving clover and rye-grass. As soon as the swathe is dry above, it is gently turned over (not *tedded* or scattered) without breaking it. Sometimes this is done by the hand, or by a small fork, and some farmers are so anxious to prevent the swathe from being broken, that they will not permit the use of the *rake shaft.* The grass when turned over in the morning of a dry day, is put into cocks in the afternoon. The mode of performing this is very simple and expeditious, and none but women, boys, and girls though under the eye of a confidential servant are usually employed. If the crop is heavy a row of cocks is placed in the middle of three, and if light of five ridges. A distinct company of carriers and rakers is allotted to every such number of ridges, and the separate companies proceed each on its own ground, which occasions a degree of competition among them, both for despatch, clean raking, and neat well-built cocks. The carriers gather the hay, and carry it to the ridge where the cocks are to be built, by one of the most experienced hands. A raker follows the carrier, taking up and bringing to the cocks the remains of the swathe. There may be in general five people employed about each row of cocks, a carrier and a raker on each side of the ridge on which they are placed, and a person on the ridge who builds them. But when crop is not weighty, more carriers and rakers are required.

As the cocks are thus placed in a line, it is easy to put two or more afterwards, into one, and the larger cocks may be speedily drawn together, to be put into tramp-ricks, by means of ropes thrown round their bottoms and dragged along by a horse. It is impossible to lay down any rules for the management of hay, after it is put into cocks; one thing is however always attended to, not to shake out, scatter, or expose the hay oftener than is really necessary for its preservation. Sometimes the cocks, more especially when the grasses were ripe, are put up so large, that they never require to go into a tramp-rick, but are carted to the stack-yard without ever being broken, and put up in alternate layers, with old hay. But where this is attempted, there must not be much clover. The practice of mixing the new with the old hay, is however a good one, and saves a great deal of time and labour, at the same time that the old hay is much improved by the mixture.

The best managers disapprove of spreading out clover and rye-grass hay, though this is often done with natural hay, when it is cut and harvested so late. The more the swathe is kept unbroken, the hay is the greener and more fragrant.

A new mode of making hay has been lately adopted by Mr. Church, of Hitchill, in Dumfries-shire. It was originally practiced in Lancashire, where it is called tippling. Mr. Church conceives it may be followed in Scotland with advantage. He considers it not only a cheap, but a superior mode of making hay, more especially in precarious seasons, or for making hay from a second crop of clover. The tipple is made as soon as the grass is mown, if dry; if not, it is better to wait till it is so. If the crop is heavy, there is a row of tipple placed on each swathe; if light two of these are put into one row. In making one a person with his right hand rolls the swathe inwards till he has a little bunch, then the same is done by the left, until both meet and form 8 to 12 lbs. or nearly so. This bundle is set up against the legs or between the feet. A rope is twisted of the grass, while the bundle is supported in this manner, which is tied round the bundle near its top, and from the top are drawn up a few straggling stems, which are twisted to make the tipple taper to a point, and give it as much of a conical shape as possible. After standing a few hours, they become so smooth on the outside, that the heaviest rains seldom wet them through, and when wet they are soon dried again. As soon as ready they are put into the summer rick; or if very dry, even the winter stack, but are never opened out or tedded, to make them dry as they never require it.—*By this method not a blade is lost, and the hay is nearly as green as a leaf dried in a book.*—In a moderate crop one woman will tipple to one mower, and a woman will rake to two tipplers or two swathers. But where the crop is strong, it may require three women to keep pace with two mowers. After the hay is put up in this manner, the crop may be considered as secure, though it may continue wet weather for a considerable length of time.

OF BARLEY.

Soil and preparation.—This grain is next to wheat in value, especially on light and sharp soils adapted to the turnip husbandry. This grain follows variously in the general system of alternate husbandry according to circumstances, as after turnips, pulse, or fallow, tho' seldom after the last, especially on good soils, except when unfavourable seasons have prevented the possibility of sowing wheat on lands fallowed for the pupose. After turnips or pulse, it is sown with one ploughing only, upon what is termed hot-fur, so as not to allow time for the newly turned up soil to lose its sap. When however these soils happen to turn up very coarse and cloddy, it is sometimes judged proper to harrow and roll the land, and to give a second or even a third ploughing, to reduce the soil to good tilth.—This is often more especially necessary, on the land where the last of the turnip crop has been consumed, when a considerable drought has set in after the surface has been much trampled upon, by which the soil becomes so hard as to require the industrious use of the plough, harrow and roller, to render it proper for receiving the barley seed, which if possible ought always to be sown on a fine tilth.* After beans and peas, it is usual to give two ploughings for barley, one before winter, as soon as the pulse crop is removed, and one in spring immediately before sowing the barley. So necessary and useful is it to sow barley immediately after ploughing, that it is usual every day to sow all the land, which has been seed furrowed.

As clover and rye-grass generally accompany this crop, the fields sown with barley are often finished off with the heavy roller.—So far as is known to the reporter, barley is never sown without ploughing; and the scarificator being hitherto but little known to Scotch husbandmen, it is of course never employed in the culture of the grain.

2. *Manuring.*—Manure is never applied in the well managed districts of Scotland, to the barley crop, except in so far as the land may be said to be manured, by consuming the preceding crop of turnips on the ground by means of sheep. In districts where sea-weed abounds, that valuable manure is sometimes applied to the barley crop after it is above ground; but no other top-dressing is customary in Scotland. In the higher parts of the country, lands that have undergone a summer fallow, are sometimes manured and sown with barley, or rather with big or bear; but commonly dung is given in the first place for rearing a crop of turnips, after which manure is not necessary.

3. *Seed process.*—Barley is sown broad-cast in ordinary cases, though sometimes drilled more especially on land that is much infested with annual weeds, or which in other words has been cultivated in a slovenly manner.—According to the opinion of a judicious writer on husbandry "thin sowing of barley must be attended with considerable disadvantage. If the early part of the season be dry, the plants must necessarily be stunted in their growth, and unable to send out offsets to stock the soil. When rains fall in the course of the summer, the plants will necessarily begin to stool or tiller at a late period. These young shoots cannot be expected to arrive at maturity; or if their ripening is waited for, there is a great risk of losing the first or earlier growth of the crop. Whether the second growth is waited for or not, the crop is uni-

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* Some farmers are of opinion that all turnips should be drawn and removed from the field, and the land ploughed up into ridges, to be moistened with rain and mellowed with frost in due time; and that the turnips should be stacked and consumed in spring on a pasture field, in sheds, or straw-yard. Others never stack any (except ruta baga) for consumption in May, and eat the turnips on the ground during the whole of April.

formly small as to quantity, of an inferior quality, and presents a very unequal sample. In such cases, the crop from the first growth often sinks down by its weight when full, under the shade of the green after-growth and never ripens perfectly; it becomes sloomy, shrivelled, small, and ill coloured, and when cut down is difficult to win, owing to its having so large a quantity of green unripe stalks among it. Upon the whole, therefore it is surely preferable, not only with barley, but all spring-sown grain, to give a sufficient quantity of seed to secure a full crop from the first growth, and not to depend upon tillering or planting out. With a full seed the crop grows and ripens equally, and the grain is uniformly good, unless in very unfavourable seasons.

The time of sowing follows that of oats.— The most proper seed-time is the latter part of March or the beginning of April, though good crops are often produced from a much later seed-time, even to the middle of May. Bear or big may be sown much later than barley, as it grows and ripens with much greater rapidity. But it may be assumed that early sowing, when the land is in proper order, is always most desirable in every variety of culmiferous grain, sown in spring, as it ensures the chance of a proper season for ripening the crop, and for the operations of harvest. Under the old Scotch system of husbandry, when the infield was constantly cropped, and filled with seed-weeds, barley was seldom sown till near the end of May; both for the purpose of destroying part of these weeds by the tillage of a spring fallow, and that the barley might have the advantage of a warmer season to outstrip the remaining weeds in rapidity of growth. Rolling is generally used, because in general clover and rye-grass are sown with this crop.

When drilled, the barley crop is usually hand-hoed, before or after the sowing of clover and rye-grass. It is hardly ever weeded by hand farther than cutting over thistles and other large weeds by means of the weed-hook: yet within these few years, some superior managers have begun to see the propriety of this useful operation, that their high priced lands, may be devoted entirely to the growth of profitable crops, instead of being ruinously usurped by a multiplicity of weeds. The reporter has lately seen with much pleasure, large gangs of young people, especially in the eastern part of East Lothian, cleaning fields of barley, and other grain from weeds; and thinks the practice will rapidly extend among judicious husbandmen. A few bushels of additional produce per acre will amply repay the expense of weeding. In some cases, where a large crop of annual weeds, such as wild mustard and radish (called runches) have sprung up early, these weeds will occupy the ground to the material injury of the crop.— There is no operation in husbandry that will pay better than hand-weeding if performed early. As soon as the annuals get two rough leaves the operation ought to commence.— The nearer that agriculture can be brought to resemble horticulture, more especially in the eradication of weeds, within the bounds of economy, so much the more profitable will it become to husbandmen and to the community.

In regard to natural herbage of a coarse description, Dr. Coventry remarks, that it should be left in small parcels, coils or cocks, somewhat dry, but yet so green or dampish, as to become in a short time, a little warm, and to emit a peculiar light smell. The warmth should be just perceptible to a hand thrust into the parcel, and it should not be allowed to rise higher; and the smell arising, where the "sweating" proceeds properly, is rather pleasant, and somewhat similar to that of an apple or walnut leaf. The herbage will then be found to be somewhat altered, and its condition for becoming fodder improved.— Directly or very shortly after the warmth has become perceptible, the hay should be spread out, or exposed so as to become dry as quickly as the weather at the time will permit, and put into large cocks.

Hay of every kind is often injured, by remaining too long in ricks, before it is secured in the stack. When the ground is damp as meadows generally are, the bottoms of the ricks are soon injured; and if the weather is rainy they are often rotted at top. To prevent the former evil the ricks should be built on a dry and well exposed spot.

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Grass best adapted to permanent pasture, and to alternate husbandry.

From Hortus Gramineus Woburnensis.

By George Sinclair, F. L. S. F. H. S. London, 1824.

This work makes us better acquainted with the habits and produce of the grasses, a department of husbandry hitherto but little cultivated, at least in this part of the empire, than any work of the kind we have ever had an opportunity to peruse—and the figures of the plants, and particular descriptions that accompany them, are so plain and practical as to be easily understood even by those who have never before looked into any book of the same description. We shall present a few passages as a specimen, recommending the whole work, however, to the careful perusal of our readers.

I.—*Seeds for Permanent Pasture.*

The proportions in which the seeds of the different species should be mixed for permanent pasture :

Cock's-foot grass *(dactylis glomerata)* ...	2 bushels.
Meadow-fescue *(festuca pratensis)* ...	2
Meadow-foxtail-grass *(alopecurus pratensis)*	2
Rough-stalked meadow-grass *(poa trivialis)*	2
Tall oat-like soft-grass *(holcus avenaceus)*	0½
Meadow cat's-tail (*phleum pratense*) ...	15 lbs.
Hard, or smooth fescue *(festuca duriuscula, vel glabra)*	2 bushels.
Crested dog's-tail (*cynosurus cristatus*) ...	1
Nerved meadow-grass (*poa nervata*) ...	0½
Wood meadow-grass (*poa nemoralis*) ...	1
Narrow-leaved meadow-grass (*poa angustifolia*)	0½
Broad-leaved creeping bent, or fiorin (*agrostis stolonifera* var. *latifolia*)	0½
Rye-grass (*lolium perenne*)	1
White or Dutch Clover (*trifolium repens*)	15 lbs.
Bush vetch (*vicia sepium*)	0½ bushel.
Sweet-scented vernal-grass (*anthoxanthum odoratum*)	0½
Perennial red clover (*trifolium pratense perenne*)	12 lbs.
Achillea millefolium, yarrow	4

The proper quantity of grass seeds to sow, per acre, is a point of the greatest importance, as regards the expense of the seed, and the speedy formation of the most valuable sward. The circumstaces of soil, tilth, and water, at the time of sowing all influence in a great degree the successful vegetation of the seed.—Should less seed be sown than is sufficient to furnish every part of the soil with plants of grass, a proportionate loss of time, labour, and land, will be suffered. Minute vacancies of plants in a recently-made pasture, or in a field of seedling grasses, may, to general observation, appear insignificant, or escape observation altogether ; but if these apparently minute deficiencies which occur over the surface of an acre be calculated, a difference, perhaps, of from ten to fifteen per cent. in the produce will be found to exist between a perfectly furnished surface of land, and one where the deficiencies of plants are so minute as scarcely to be perceived. In the most productive natural pastures, no deficiencies of plants are to be found—every part of the surface is closely interwoven with plants; and not as in pastures artificially formed of one or two species of grass only, where the surface is shaded with plants. A rough, uneven surface will require a much greater quantity of seed, than land with a dry, finely pulverized, smooth, consolidated surface. If the surface is wet at the time of sowing, a greater quantity of seed will be required than otherwise would be necessary. The seeds of most of the essential permanent pasture grasses are so small and light, as to be readily taken up in clumps by the harrow or roller passing over a damp surface.

If the seeds of the above grasses and plants be mixed in the different proportions before stated, one bushel of such mixture of seeds, sown on an acre of land, will (omitting fractions) afford but two seeds to every square inch —while the most productive ancient natural pasture examined, had seven plants to every square inch. But the statements respecting the seeds are founded, it is evident, on the supposition that every seed vegetates and produces a plant, and that the seeds are all equally spread over the surface; but as before observed, there are more circumstances than one which interfere to prevent the successful vegetation, and equal distribution of all the fine seeds of grasses individually considered, and which may be sown at any one time.—The seed of cock's-foot is often defective, the perennial red clover has frequently many abortive seeds, and the meadow-foxtail seed is generally so bad as to afford but one fertile seed out of three—to obtain a required number of plants on a given space of ground, from a known quantity of seed, a pretty large allowance must therefore be made to the seed, in order to meet those circumstances adverse to certain vegetation in every instance, and equal distribution of the plants.

An examination of the most productive pastures shows, that when from twelve to twenty different species of grasses are intimately combined together, six or seven plants to the square inch of surface are not too many.—The turf from the irrigated meadow afforded the greatest number of plants, being twelve plants to a square inch—the predominant species in this turf was the *poa trivialis*, the seedling plants of which are small, and, along with the plants of *bromus arvensis*, derive their support, in irrigated meadows, more from the water than the soil. Few of the roots of these species had much hold of the ground, and a great number of the plants were rooted merely among the crowns of the roots of the other species of grass which composed this turf. The statements brought forward relative to pastures artificially formed of rye-grsss and clovers, and those facts connected with the number of plants of grasses which are found to occupy a given space of ground, when one species only of grass is cultivated by itself, proved clearly that much less seed is required to form an artificial pasture of one or two species of grass, than is required to form a pasture for permanency, whose properties of produce and value shall equal or approach to that of the best natural pastures. The artificial pasture of rye-grass and clover, above mentioned, had been made by sowing one bushel of seeds, viz. three pecks of rye-grass and one peck of white clover and trefoil; three plants to the square inch were produced by that quantity of seed—and had more seed of the same species of grass been used, it is more than probable, from the above facts, that the pasture would have suffered rather than benefited by it; but had there been used the seeds of a variety of different species of grasses, double the quantity of seed might have been used, and the value or productiveness of the pasture increased in the same proportion.

The results of Mr. Taunton's valuable experiments on the cultivation of separate grasses, and the interesting remarks of Mr. Blaikie o the same subject, are in perfect confirmatio of the above statements, respecting the quantity of seed to be used in cases where onl one or two species of grass are cultivated.—Four bushels and a half of the above mixtur will give (omitting fractions) the same numbe of seeds to the square inch, as the like spac of the sward of the irrigated meadow contained plants. Now, after deducting for th deficiency caused by the number of barre seeds in many of those essential grasses, th quantity of four and a half bushels per acr of this mixture of different seeds, will be foun for general practice not too much. The practical trial, mentioned at page 130, prove precisely the truth of the above calculation. But should the proportions of the differe kinds of seed be altered from the above, th quantity of seed required, for a given space ground will be less in proportion as the ferti seeded grasses predominate in the mixture—and the smaller the number of different speci that are combined together, the smaller wi be the quantity of seed per acre require ten pecks being the *maximum*, and two pec the *minimum*. The above calculations of t number and weight of the different see will afford a ready guide to determine t number of plants of grasses which will produced on a given space of ground, fro a known weight or measure of the see whether it be of one species of grass only, of a combination of many species.

The larger seeds should be mixed by ther selves, and in the same manner, the small seeds, should be mixed together, and so after the mixture of larger seeds, as they quire much less covering. The separation the larger from the smaller grass seeds, wh mixed, can be readily effected by a prop sieve.

I have sown the seed of the same gras in every month of the year, January cepted; and though much depends on weather and the state of the ground, the sults were always in favor of the month September, and the beginning of Augus and, next to that, the middle or latter end May, according as the weather was dry

The seeds vegetated, and grew with most vigour under the following circumstances: when the ground had been deeply stirred, broken fine, and made perfectly smooth and compact on the surface with a heavy roller, previous to sowing the seeds, the ground in a dry state, at the time of sowing, the seeds sown on this fine dry compact surface, the larger seeds not more than just covered, by drawing a fine rake on the level surface, and afterwards sowing the small seeds, and covering them no farther than what was effected by a repetition of the roller. The results further showed, that, next to a coarse, unconsolidated, or loose surface, the practice of deep sowing was, in the second degree, more injurious to the vegetation of the seeds and the first progress of the plants, than any other error that could be made in the *manual* part of the process of sowing the natural grasses on a soil of good quality.

When land is to be sown for permanent pasture, no admixture of any annual or grain crop, or broad-leaved clover, should be admitted with the grass seeds. Experience proves that they are highly injurious to the intention of speedily forming a solid productive sward—and the profit that may accrue from a grain crop thus obtained will be much overbalanced by the loss of grass in the two following seasons. Every plant of these annual crops occupies a place, to the detriment of the expected sward. Besides rendering the surface porous by the decay of their roots in the end of autumn, much mischief, likewise, is done to the sward by portions of the crops being beat down with heavy rains.—The above mixture should be sown in the autumn or spring, at the rate of four bushels and a half to the acre. Much less will form a good pasture; but when the seeds can be had from the farm at a moderate expense, the maximum quantity should be adopted.—If sown in spring, it will be found highly useful, in the following autumn, to give the surface a slight top-dressing with rotten dung or compost, in which the seeds or roots of weeds are not suspected, and to sow immediately after half a bushel, more or less, of the mixture of seeds, according as the sward appears to be deficient of plants—after which the top-dressing being previously well reduced by a slight bush-harrow) the roller should be liberally used; and *rolling*, for the first two years, should never be neglected at any favorable opportunity. If the seeds are sown in autumn, the top-dressing, re-sowing, and rolling, will be found equally requisite and beneficial in the following month of May; and even repeated in the following autumn, they will greatly forward the intention. This is imitating the process of nature in forming pastures—with this advantage, that for one seed of a valuable species of grass supplied to the soil by the slow and gradual process of nature, in one season, a thousand are supplied in the same space of time; and thus take possession of their natural soil, without the danger and inconvenience of expelling its usurpers.

There has been some difference of opinion respecting the manner of reaping the produce of seedling grasses, whether by depasturing with sheep, or by mowing after the plants have perfected their seed. The manure supplied by sheep to the young grasses is of great advantage; but the animals are apt to bite too close to the root, and sometimes tear up the young plants altogether. I have found on repeated trials, that cropping seedling grasses before they had produced flowers, had the effect of retarding and weakening the after-growth of the plants for that season very much. But after the period of flowering, cropping was found to strengthen, and rather encourage the growth of plants. In the same way I found that old plants of grass, when cut very close after the first shoots of the spring made their appearance, afforded about one-third less weight of produce in the whole season, than those plants of the same species which were left uncut till the flowering culms began to appear. As the advantages of the manure of the sheep may be supplied by top-dressing, and the disadvantages resulting to the tender seedling plants from early and close cropping, cannot so speedily be removed, the practice of suffering the grasses to produce flowers before they are cut, with the application of top-dressings, and the use of the roller, till the spring of the second year, appears to be far more profitable than the former practice of depasturing the seedling grasses at an earlier period than the spring of the second year—but in this, no doubt, as well as in other particular modes of management re commended for general practice in the culture of plants, local circumstances may interfere so much as often to render some modification of them necessary.

But though the pasture be formed in the best manner, with a combination of the most valuable grasses, nevertheless a judicious mode of treatment afterwards, is as essentially necessary to continue its value.—By proper stocking, top-dressing and weeding, very indifferent pastures (where the soil was adapted to the growth of grass) have been brought to a state equal to the most valuable —and, on the contrary, the richest natural pastures, by neglect of proper stocking, top-dressing, and weeding, or the too frequent repetition of hay crops, have become so unprofitable, as to require many years to bring them again to their original value. I have witnessed in Lincolnshire soils of a similar nature in every respect, indeed a fence only separating them, exhibit the effects of judicious and of bad treatment as regards the frequent repetition of hay crops on the same field. On one side of the fence, where judicious stocking had been practised, the superior grasses wholly occupied the field—nor could I observe an inferior plant in the herbage of it, much less absolute weeds; but on the other side of the fence, where the field had been mown for a succession of years, the superior grasses had given place to the cow-parsnip *(Heracleum sphondylium,)* cow's-allheal *(Stachys palustris,)* knapweed *(Centaurea nigra ;* and among these weeds were thinly scattered the *(Holcus avenaceus)* tall oat-like soft grass, *Dactylis glomerata* and *Agrostis vulgaris.* The neglect of foul hedges and road-sides, is the best possible encouragement for the propagation of these perennial weeds which infest permanent pasture land.—In Warwickshire, I have seen valuable pasture land so deteriorated by the intermixture of these weeds, supplied liberally from foul hedge-rows and road-sides, as to be little superior to the worst land, kept under proper management—besides, the weeds in these nurseries afford shelter, and at particular periods, nourishment to insects, which annoy and distress cattle in summer.

The comparative value of permanent pasture and tillage land, is a subject out of the reach of the humble narrator of facts. All that has been brought forward goes no farther than to prove that where such lands have already been converted to tillage, they may, by the means now recommended, be brought to as valuable a state of pasture as before, if not to a superior state, and that in the space of four years. The means for effecting this, however, have not yet been sufficiently within the power of the agriculturist. It is required that a more general knowledge of the different grasses, and of the importance, or rather necessity, of a combination of many different grasses, instead of two or three different species, to form permanent pasture, in a short space of time, equal to the best formed by nature, shall be generally diffused among practical farmers—and also that the mode shall be adopted of raising and obtaining the seeds of the valuable and essential permanent pasture grasses, from the farmer's own farm.—The manner of obtaining an unfailing supply of the seeds of the essential permanent pasture grasses, at a trifling expense, from the farmer's own farm, was before mentioned ; but I may be permitted to revert again to a subject so important. By the help of the figures, and the botanical discriminating characters of the different species of grasses given in this work, the farmer may soon furnish himself from his best grass land, with the seeds of most of the essential grasses, at least in sufficient quantity to form a first plantation. Those species of grasses which are not on his own farm, the seedsman, or a neighbour, may readily supply, in quantity sufficient for the same purpose. These seeds being obtained, a piece of good rich land, should be selected, of a nature intermediate as to moisture and dryness. It may be quite unnecessary to observe, that this soil must be perfectly clean, free from all kinds of root-weeds and seeds of annual weeds. The surface or tilth cannot be made too fine, level, and consolidated, to receive the seeds. The middle of May or the beginning of June are favorable seasons for sowing the seed ; but should a naked summer fallow be required, in order to bring the land to the absolutely necessary state of tilth and cleanness now mentioned, August, or from that time until the beginning of September, will be found favorable seasons for sowing.—The ground thus prepared should be divided into three parts, to correspond to the three different combinations of the essential grasses, which combinations were shown, at page 38, to ripen their seeds respectively at three different periods of the season. The seeds of the different species recommended above should be mixed in the proportion stated, and each of the three combinations, or mixtures of seed, sown on the division of ground set apart for it. The seeds may either be sown broadcast or in drills—whichever mode will deposite the seed in the most regular manner is the best; for the clean state of the tilth will render weeding the first year unnecessary; and the combination or mixture of different species of the superior grasses will afterwards so fully occupy the land as to prevent the intrusion of weeds or of less valuable plants.—The seeds of clover, yarrow, and of the bush vetch, can be had from the seedsman. As soon as the plants of grasses have come up, the surface of the land should be occasionally rolled, as plants thereby sooner establish themselves firmly in the ground, and make more vigorous and rapid growth, than when the surface is less firm and consolidated. In the end of autumn, or early in the spring, a top-dressing of rotten dung, or finely pulverized compost, should be applied to the seedling grasses, in such a manner as to prevent the necessity of bush-harrowing for the first year —a handy workman with a shovel can spread the compost regularly and finely among the plants. The use of the roller should not be neglected, on every favorable opportunity of dry weather. As soon as the seeds are ripe, which may be known by passing a spike or panicle between the fingers, advantage should be taken of favorable weather to mow the grass, laying it in thin swaths, and carefully turning it as often as necessary until the crop is sufficiently dry to thrash out, which operation must be effected as soon as possible, either on the spot or in the barn, as the circumstances of weather and convenience may appear to the intelligent farmer most to require.

By the ordinary practice of returning such soils to permanent pasture, disappointment is sure to follow; and to attempt to form a valuable permanent sward on soils not adapted to the growth of these grasses, were equally unwise—though, if the subsoil be favorable, the land may be so much improved, at a moderate expense, by the means recommended at pages 124 and 125, as to fit it for the growth of the best grasses.

Grasses and others Plants adapted for the Alternate Husbandry.

The grasses, and other plants best fitted for alternation, as green crops with grain, are such as arrive at perfection in the shortest space of time, or within the compass of two years—such as have their leaves broad and succulent, and that do not quickly run to seed. Plants of this description are supposed to produce the greatest weight of herbage at the least expense to the soil.

It is a curious and well known fact, that any species of plant that has continued till its natural decay on a particular soil, cannot be again immediately reared with equal success on the same spot till some other crop intervene —but that a *different* species of vegetable will there succeed better, for its peculiar period of life, than it would on a soil naturally better adapted to its growth, where it had just attained to perfect maturity. This holds good with respect to annual plants as well as to those that continue to live many years. But it is better seen in the former, as their habits and duration in the soil are oftener and more directly within the reach of common observation.

On this antipathy of plants seems to depend the theory of alternate cropping with green crops and grain—varying in some measure according to the circumstances of soil and climate—but the principle appears to remain the same.

On analysing a soil immediately before and after producing an impoverishing crop, the results of such analysis do not point out any diminution in the weight or proportions of its constituents, sufficient to account for the weight of vegetable matter produced. The decomposing animal and vegetable matters of the soil are the only constituents wherein a sensible loss is perceived.

M. Braconnet grew plants in substances free from any kind of soil, as in flowers of sulphur, and in metal. He supplied the plants with distilled water only. They arrived, by these means, to a perfect state of maturity.—The produce was submitted to careful analysis, and the results shewed that the different vegetables so produced, contained all the constituents of the different species, precisely the same as when the plants were cultivated on their natural soils.

Some have supposed that the antipathy of plants arises from the roots depositing a noxious matter in the soil. And, according to the experiments of M. Burgmanns, oats are thus killed by the field saw-wort—wheat by the blue erigeron; flax by the corn scabious, and the purple spurge—and buck-wheat by the corn spurry.

The analysis of a plant, therefore, and of the soil which produced it, appear insufficient to account for the true cause of the impoverishing principle of vegetables to the soil, and why one species should exhaust it more than another.

Some useful information, however, on this very interesting point may probably be drawn from facts obtained by daily practice and observation in the garden and the farm.

	Green Food. *lbs.*	Nutritive Matter *lbs.*
Mangel wurzel or white beet, (*Beta cicla*) produces upon a suitable soil, or a deep rich loam, on an average, twenty-five tons of green food per acre, every pound weight of which contains 390 grains of nutritive matter—and therefore per acre,....................	56,000	3120
Carrots (*Daucus carota*) produce upon a deep light loam, on an average, eleven tons, every pound of which contains 750 grains of nutritive matter,............................	24,640	2640
Potatoes (*Solanum tuberosum*) produce upon a fresh loam, of intermediate quality as to moisture and dryness, on an average, fifteen tons per acre, affording of nutritive matter per pound, 1000 grains,................	33,600	4800
The common field or white turnip (*Brassica rapa*, var.) affords from a sandy loam, on an average, sixteen tons of green food, a pound of which contains 320 grains of nutritive matter,....................................	35,840	1638
The Swedish turnip, or ruta baga [*Brassica rapa*, var.] produces on a favourable soil, or a strong loam, on an average, thirteen tons per acre, a pound of which affords of nutritive matter, 440 grains,................	29,120	1830
Cabbages [*Brassica oleracea*, var.] which delight in a rich strong loam, afford of green food, on an average per acre, twenty-five tons, every pound of which contains 430 grains of nutritive matter,..	56,000	3440
Kolh rabi [*Brassica oleracea*, var.] the produce from a soil similar to that for cabbages or Swedish turnips, is, on an average, fourteen tons per acre, and affords of nutritive matter, per pound, 420 grains,......	31,360	1881

If a plant, therefore, impoverishes the soil in proportion to the weight of vegetable substance it produces on a given space of ground, the following will be the order in which the plants just mentioned exhaust the land.

Mangel Wurzel,	25	The proportions which they bear to each other with respect to weight of produce.
Cabbages,	25	
White turnip,	16	
Potatoes,	15	
Kohl-rabi,	14	
Swedish turnips,	13	
Carrots,	11	

Experience has long since proved, that carrots exhaust the soil in a much greater degree than white turnips—though, by this mode of judging they impoverish land in a less degree than any of these plants. But when we take the weight of nutritive matter which a plant affords from a given space of ground, the results are very different, and will be found to agree with daily experience in the garden and on the farm.

Each species of animals is instinctively directed to seek the kind of food which affords it the most suitable nourishment, and to shun what would be injurious. It is this which guides the caterpillar to the leaf, the duckling to the pool, and the samlet to the ocean. In looking at a pasture field, we may observe that there are some plants which are cropped to the ground, while others are left untouched. But the tastes of animals being exceedingly various, what is rejected by one species is greedily devoured by another. Nay what is eaten by the goat, for example, with avidity, and with impunity by the horse or sheep, as the water hemlock (cicuta virosa) is certain poison to the cow. Hence it has been called water-cowbane, and a Fifeshire farmer who had experienced its effects, was heard, with an expression of sorrow, to call it *deathen.*

In a tame state, animals seem to lose the useful information from instinct, which is so essential to their existence in a wild state — Thus cows which have been kept within doors during the winter, and supported chiefly on hay, when turned out to pasture in the spring, devour indiscriminately every green herb, and frequently suffer for their indiscretion.—Linnæus tells us that when he visited Tornea, the inhabitants complained of a distemper which killed multitudes of their cattle, especially during spring, when first turned out into a meadow in the neigbourhood. He soon traced the disorder to the water hemlock, which grew plentifully in the place, and which the cattle in the spring did not know how to avoid.

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CURRENT PRICES IN DERRY.

Oatmeal	...	13	0	*to*	14	0	*pr cwt*
Oats	...	0	10½	–	0	11½	*pr st.*
Barley	...	1	0	–	1	1	
Potatoes	...	0	2	–	0	2½	
Beef	...	0	4	–	0	7	*pr lb.*
Mutton	...	0	4	–	0	7	
Veal	...	6	6	–	0	10	
Flax undressed		30	0	–	55	0	*pr cwt*
Five hank yarn		2	9	–	3	4	*pr spl*
Four do. do.		2	7	–	3	0	
Three do. do.		2	8	–	2	11	
One do. do.		2	6	–	2	8	
Hides	...	40	0	–	60	0	*pr cwt.*
Pork	...	40	0	–	44	0	*pr cwt.*

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